THE CALIFORNIA ALMANAC OF EMISSIONS AND AIR QUALITY

— 2006 Edition —

This almanac was prepared and published by the staff of the

Planning and Technical Support Division
California Air Resources Board

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A Note from the Chairman ….

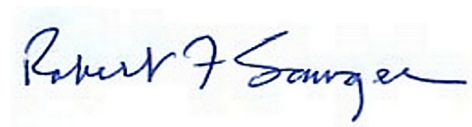
Welcome to the 2006 Edition of the California Air Resources Board's Almanac of Emissions & Air Quality. This document provides an overview of California's air quality and the emissions that contribute to our air pollution problem. California's air quality continues to improve but we face substantial challenges. Attaining air quality standards and addressing air pollution related health risk requires new emission reductions statewide. As the agency responsible for overseeing California's comprehensive air quality programs we take this public health challenge very seriously.

This document is intended as a reference for the general public as well as those involved in air quality issues on a daily basis. It is part of our commitment to provide broad public access to air quality information. Since air pollution is a complex subject this almanac can only serve as a starting point. However, we hope it provides a common basis for characterizing California's air quality and emissions. More detailed information on these subjects can be found on our website.

The almanac presents data from both statewide and regional perspectives. Regions are defined as air basins which share a common air mass. In terms of political jurisdictions, we also report data by county within an air basin. To understand trends, we report both current and historical air quality and emissions data.

From statewide summaries to more local county level information, the Almanac is intended to be a "go-to" resource for those interested in California's air quality. Ensuring easy and straightforward access to information on air quality, our progress, and the remaining challenges should help all Californians to do their part to achieve clean air.

I hope you find this Almanac informative and helpful. The Preface lists e-mail and telephone contacts for your questions or comments. For more information about air pollution, ways to combat it, or the Air Resources Board, please visit our web site at *www.arb.ca.gov*.



CHAIRMAN,

CALIFORNIA AIR RESOURCES BOARD

Preface

This almanac was prepared and published by the Air Resources Board (ARB) staff to aid air quality professionals and the public in evaluating air quality in California. The ARB, as part of the California Environmental Protection Agency (CalEPA), is the State board responsible for achieving and maintaining healthful air quality in California. This responsibility is shared with local air districts and the United States Environmental Protection Agency (U.S. EPA).

The following staff contributed to the production of this almanac: Andy Alexis, Jeff Austin, Alexa Barron, Vijay Bhargava, Anna Komorniczak, Darryl Look, Chris Nguyen, Marci Nystrom, Ravi Ramalingam, Michael Redgrave, Rajinder Sahota, Webster Tasat, Dr. Patricia Velasco, Robert Weller, and Xijie Zhang. The project was managed by Dr. Linda Murchison, Chief of the Planning and Technical Support Division, Cynthia Marvin, Assistant Division Chief of the Planning and Technical Support Division, Karen Magliano, Chief of the Air Quality Data Branch, Peggy Taricco, Chief of the Emission Inventory Branch, Dr. Michael Benjamin, Chief of the Mobile Source Analysis Branch, Mena Shah, Manager of the Community Assessment & Statistical Analysis Section, and Gayle Sweigert, Manager of the Air Quality Analysis Section.

This is the seventh edition of this almanac which is updated annually as additional air quality and emission inventory data become available. If you find errors or have suggestions for improvements, please let us know. For general issues or issues related to air quality data, contact Paul Cox at (916) 327-7609 or *pcox@arb.ca.gov*. For issues related to emissions data, contact Martin Johnson at (916) 324-5783 or *mjohnson@arb.ca.gov*. For issues related to air toxics data, contact Janelle Auyeung at (916) 322-3531 or *jauyeung@arb.ca.gov*.

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The California Almanac of Emissions and Air Quality - 2006 Edition

Chapter 1: *Introduction*

Chapter 2: *Current Emissions and Air Quality -- Criteria Pollutants*

Chapter 4: *Air Basin Trends and Forecasts -- Criteria Pollutants*

Chapter 5: ***Toxic Air Contaminant Emissions, Air Quality, and Health Risk***

Chapter 1

Introduction

Overview

This almanac contains information about current and historical air quality and emissions in California. In addition, forecasted emissions are presented. This document is a reference for anyone interested in air quality and emissions for criteria pollutants (ozone, PM, CO, etc.) and toxic air contaminants (TACs). When using this information, please remember that the air quality and emission values are a snapshot of data at a particular point in time. This edition of the almanac is a year 2005 snapshot of the air quality and emission inventory databases. It is important to keep in mind that emission and air quality data can change over time. For example, emission data may be revised to reflect improved estimation methods, and air quality data may be changed because of corrections or additions of data.

The information in this document is based on data maintained in ARB's emission and air quality databases. The emission and human population estimates are presented at five-year intervals from 1975 to 2020. Data for vehicle miles traveled (VMT) are also provided at five-year increments, beginning with the year 1980. The air quality statistics in this almanac are for the period 1985 to 2004 for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. In addition, available 2005 statistics for ozone are included for the five major air basins. PM_{10} monitoring did not begin until 1988 and $PM_{2.5}$ monitoring until 1999. Therefore, PM_{10} data cover the years 1988 to 2004, and $PM_{2.5}$ data cover the period 1999 through 2004. Air quality monitoring of TACs began in 1983; annual statistics for TACs are available from 1989 onward, and the data for TACs presented in this almanac covers the period 1990 to 2004.

What's New in the 2006 Almanac?

- Emissions from the Outer Continental Shelf (OCS) now included in statewide emission totals (Chapter 2, Chapter 3)
- 8-Hour ozone statistics (Chapter 2, Chapter 4, Appendix A, and Appendix B)
- $PM_{2.5}$ discussion for all five major air basins (Chapter 4)
- Outer Continental Shelf emission data added (Appendices A & C)
- Statewide concentration and risk table added (Appendix C)

Organization

This document is divided into five chapters and six appendices that include information, maps, graphs, and tabular data. Chapter 1 contains introductory material. Chapters 2 through 4 and Appendices A and B provide information on the most important criteria pollutants for which health-based ambient air quality standards have been established. Chapter 5 and Appendix C provide information on TACs. Appendix D includes information on population and vehicle miles traveled (VMT), and Appendix E contains information on natural emissions. In addition to this information, Appendix F provides lists of the figures and tables included in Chapters 1 through 5.

To help the reader navigate through the document, a short summary of each chapter and appendix is provided below:

- **Chapter 1** contains introductory material designed to help the reader better understand the remaining chapters. Included is information about data interpretation, emission estimation, air quality monitoring, the State and national standards, web resources, area designations for the State and national standards, and toxic air contaminants. A glossary of terms used in the Almanac, as well as a list of air pollution contacts is provided at the end of this chapter.

- **Chapter 2** includes current emissions for NO_x, ROG, PM_{10}, $PM_{2.5}$, CO, and NH_3 (ammonia) and air quality data for ozone, PM_{10}, $PM_{2.5}$, and CO for each air basin. The emission data also consists of lists of the State's highest emitting facilities. Information is included on how air quality in California compares to other parts of the country.

- **Chapter 3** provides historical emission and air quality trends from a statewide perspective. Statewide emission and air quality trends for ozone, PM_{10}, $PM_{2.5}$, CO, lead, and NO_2 are included. In addition, emission trends for oxides of sulfur (SO_x) are included.

- **Chapter 4** provides historical emission and air quality trends for the State's five most populated regions. The pollutants covered are ozone, PM_{10}, $PM_{2.5}$, CO, and NO_2.

- **Chapter 5** contains emission, air quality, and health risk information on TACs for the State as a whole and for five of California's most populated regions. The ten TACs, including diesel particulate matter (diesel PM), that pose the greatest risk in ambient (outdoor) air are covered. The air quality and health risk trends are based on measured ambient data (except for diesel PM, which is based on estimates of ambient concentrations).

- **Appendix A** includes more detailed emission data for NO_x, ROG, PM_{10}, $PM_{2.5}$, and CO organized alphabetically, by air basin. Also included is a list of the highest emitting facilities in each air basin. Air quality data are provided for the criteria pollutants: ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2. Data are provided for all air basins and all counties (or county portions) within these air basins.

- **Appendix B** provides emission and air quality information similar to that found in Appendix A, but arranged by pollutant.

- **Appendix C** provides more detailed information on the ten TACs discussed in Chapter 5, including information on the emissions in each county and the air quality and health risk information for the individual sites where TAC concentrations are routinely measured.

- **Appendix D** provides tabulated information on surface area, population, and VMT for the State, each air basin, and for each county (or county portion) within the air basins.

- **Appendix E** provides emissions estimates for natural sources, including wildfires, vegetation (biogenic sources), and oil seeps (geogenic sources).

- **Appendix F** provides lists of the figures and tables included in Chapters 1 through 5.

This almanac focuses on air emissions and air quality. The California Environmental Protection Agency (Cal/EPA) has developed a set of indicators to measure California's overall environmental health. The indicators cover all media, not just air, and help us understand the causes of environmental problems, the status of the environment, and the effectiveness of our environmental strategies. The data in this almanac are more detailed indicators of the State's air quality health, and in conjunction with Cal/EPA's indicators, provide a continuum of information from detailed air quality trends to California's overall environmental health. The most recent set of Cal/EPA indicators are available at www.oehha.ca.gov/multimedia/epic/index.html.

California Facts and Figures

California is truly a "Land of Contrasts." The State offers a variety of physical features, including mountains, valleys, oceans, and deserts. In terms of size, California ranks third in the United States, after Alaska and Texas. California covers a total area of close to 160,000 square miles and is larger than many nations in the world today, including Great Britain, Japan, Italy, and Norway. Of California's total area, about 152,000 square miles are land, and almost 8,000 square miles are water. The Pacific Ocean forms the western boundary of California, with a coastline more than 1,200 miles long. This is nearly equal to the combined Atlantic coastlines of Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, and New Jersey.

California is blessed with a wide range of scenery and climates. The southern coastal areas enjoy a Mediterranean climate with the oak-studded hills and sunny beaches for which the State is famous. The northern coast is covered by fog-shrouded redwood forests. Inland lies the vast Central Valley with its millions of acres of cropland. The Sierra Nevada in the eastern half of California runs nearly two-thirds the length of the State. The Sierra includes the highest mountain in the continental United States, Mount Whitney, as well as the southernmost glacier in North America. Most of the southeastern portion of the State is desert, with sun-baked Death Valley, the lowest point in North America, lying only 60 miles from Mount Whitney. Further south are the scenic mountain ranges of the Mojave Desert.

To a large degree, California's pleasant climate and abundance of relatively level land are the major features that have drawn people to the State. Since 1980, California's population has increased about 54 percent, from nearly 24 million to just over 37 million in the year 2005. The increase in the average number of vehicle miles traveled (VMT) each day on our roadways has been even more dramatic. VMT has increased 120 percent, from about 389 million miles per day in 1980 to 873 million miles per day in 2005. With these dramatic increases in population and VMT have come tremendous challenges in controlling emissions to improve air quality.

Interpreting the Emission and Air Quality Statistics

Interpreting Criteria Pollutant Emission and Air Quality Statistics. A number of pollutant trends are presented in this almanac. Emission and air quality trends for the same pollutant are usually highly correlated. In some cases, however, the two trends may differ, at least in terms of the rate of increase or decrease. The comparison of emission trends to air quality trends is complex, and a number of confounding factors can affect the resulting trends, such as the impacts of transported ozone and particulate matter from one area to another. An area can show a stable (or flat) emission trend because local emission growth offsets the reductions achieved through technology, but this same area may show an improvement in air quality because ambient concentrations reflect the impact of transport from a region that has improved. Other factors that can affect air quality are meteorology, which can cause large differences from year to year, and changes in monitoring sites (both site closures and the establishment of new sites). In addition, the emission data and some air quality statistics are based on estimates. These estimates use the best available methods, however, they embody some degree of uncertainty. All of these factors should be kept in mind when using and interpreting the trends.

Emission inventory trends make use of historical emission inventory data and projections based on expectations of future economic and population growth and emission controls. The historical emission inventory data in this almanac were updated to reflect improvements in emission inventory methodologies. The future year projections for stationary and areawide sources were developed using the California Emission Forecasting System (CEFS) model assuming a 2004 base year and California specific economic projections. These economic projections were prepared by E.H. Pechan and Associates and reflect information provided by local air districts. The stationary source emission forecasts reflect control measure information received from local air districts as of September 2004. Future year emission projections for on- and off-road vehicles were developed using the ARB EMFAC 2002 version 2.2 and OFFROAD models, respectively. State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at *www.arb.ca.gov/sip/siprev1.htm*.

In general, the criteria pollutant air quality trends in this almanac represent data that have been summarized from a network of monitoring sites to characterize the air quality in a particular region (for example, a county or air basin). Whenever data are summarized, the resulting statistics may be influenced by a number of factors, including the number of monitoring sites in operation and the completeness of the data. To help in interpreting the air quality trends, the ARB has included information on the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico in its publication titled: *"California State and Local Air Monitoring Network Plan - 2005"* (October 2005). This report is available on the web at *www.arb.ca.gov/aqd/namslams/namslams.htm*, or from the ARB's Planning and Technical Support Division by calling (916) 322-5350.

A number of air quality statistics or indicators are used in this document. In general, 1-hour, 8-hour, and 24-hour concentrations reflect measured values and can be summarized by day, season or year. These data are also used to determine the number of days in which State or federal standards were exceeded. For the most part, this almanac provides data summarized as annual values. In contrast to measured values, the peak indicators are calculated from the measured data. The peak indicator is used throughout the almanac for air quality trends for State standards. It represents the maximum concentration expected to be exceeded no more than once per year, on average based on the distribution of the data for each monitoring site. Because it is based on a robust statistical calculation using three years of data, it is relatively stable, thereby providing a trend indicator that is not highly influenced by year-to-year changes in weather. Finally, it is important to point out that the calculated number of days above the State and national PM_{10} and $PM_{2.5}$ standards differ from other pollutants in that they are statistically derived from the measured data. This is because monitoring does not occur every day as with other criteria pollutants.

Interpreting the Toxic Air Contaminant Emission and Air Quality Statistics. This almanac includes emissions data, ambient concentrations, and health risk estimates for the ten toxic air contaminants (TAC) that generally pose the greatest known ambient risk in California. A TAC is defined as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (Health and Safety Code section 39655). Numerous factors influence ambient measurements of TACs, and a number of assumptions are embodied in the summary statistics. Only the most important factors are summarized below.

The toxics emission inventory for 2005 represents the most current inventory compiled by the ARB staff. The toxic emissions for stationary sources include emissions data from the AB 2588 Air Toxics "Hot Spots" Program. For all source categories associated with diesel fuel combustion, all particulate matter or "PM" emitted from these sources was considered "diesel PM." The areawide source emissions were estimated by either the local air districts or the ARB staff. These toxic emission estimates were developed by speciating criteria emissions. Emission estimates for the other mobile source categories are primarily from ARB's OFFROAD model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local air districts or ARB staff. Local air districts may also provide estimates for categories usually developed by ARB staff. In this case, toxic emissions for all area sources and mobile sources are estimated by speciating criteria pollutants with category specific profiles. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC 2002, version 2.2. Again, the emission estimates have been speciated for toxics.

Air quality statistics are based on the analysis of monitoring data collected by the ARB. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here. Based on available data, the ten TACs that pose the greatest risk are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, formaldehyde, methylene chloride, *para*-dichlorobenzene, perchloroethylene, and diesel particulate matter (diesel PM).

The ARB established the TAC network after the California Legislature enacted a program in 1983 to identify the health effects of TACs and reduce their exposure to protect the public health. The network measures the presence of TACs in the ambient air, and statewide toxics monitoring data are available from 1989 onwards. In general, TAC concentrations are sampled once every twelve days, for an average of two to three samples per month. The measured concentrations are used to represent average statewide concentrations and health risk. It is important to note that actual concentrations can vary from one location to another, and local concentrations and risks may be either higher or lower than the average values. The ARB has also been involved in efforts to better characterize local and community-wide exposures, and more information on these studies is available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

Since the TAC network began operation, there have been some site changes. In several cases, the site changes occurred during the middle of a year. Because the site-by-site statistics presented in Appendix C do not combine concentrations measured at different sites, an annual average for the year during which the site change occurred will be missing for those sites. Since all of the valid monthly means from each site are included in the air basin or statewide annual average, the site changes may lead to some variation in year-to-year statistics. In particular, the average health risk estimates may include a varying number of compounds and sites. Therefore, they may not be directly comparable from one year to the next. Site changes in each of the five major air basins are described in Chapter 5.

During the normal course of monitoring, most of the TACs have experienced some missing data due to sampling or analysis problems, and several TACs show substantial gaps in their data record. The every twelve days sampling schedule only allows for two or three samples to be collected at each site during any month. In order to calculate a valid annual average (a mean of monthly means), each month during the year must have at least one valid measurement. Therefore, if there are no valid data in any given month, data for the year will appear to be missing, even though some data may be available. In some cases, TAC measurements fall below the limit of detection (LOD) of the instruments. The LOD is the lowest concentration of a substance that can be reliably measured, and measurements below the LOD are assumed to be one-half the LOD when estimating an annual average. Table 5-1 in Chapter 5 lists the LOD for each of the ten highest risk TACs. It is important to note that the concentrations and health risk estimates presented in this almanac are based on ambient outdoor measurements. They do not account for any indoor exposures to TACs, which can contribute significantly to individual health risk.

The health risk estimates are based on ambient measurements, and they reflect the estimated number of excess cancer cases per million people exposed over a 70-year period. These data are very useful for comparing relative health risks for the ten compounds considered (e.g., comparing the level of health risk for one compound or area relative to another). However, it is important to note that there are varying degrees of uncertainty associated with these data. The risks presented are only for the ten compounds considered. In addition, the risk is for the general population's outdoor exposure, and actual health risk may be higher or lower than reported here. Furthermore, a number of factors add to the uncertainty, including the assumptions of the underlying risk factors, the assumption of a constant 70-year exposure, measurement biases and uncertainties, and the absence of ambient air quality data for other TACs that may pose a substantial health risk. Since risk data do not have precision at the tenth decimal place, risks that are less than one excess cancer case per million people are expressed as "<1".

Meteorology's Role in Air Quality

Air quality trends for a 20-year period are presented in this almanac. These trends reflect the progress achieved through our long history of emission control programs. Besides emissions, the trends are affected by meteorology (weather) and terrain. Meteorology causes year-to-year changes in air quality trends that can mask the benefits of emission reductions. Therefore, this almanac focuses on long-term rather than short-term trends.

Meteorology does not affect all pollutants in all places the same way. Ozone is formed in the atmosphere as sunlight initiates a complex set of chemical reactions. On hot sunny days, the abundant sunlight starts the ozone-forming processes and high temperatures promote fast chemical reactions. If the air is stagnant, the ozone formed is not dispersed or diluted by cleaner air. So, the highest ozone concentrations usually occur on hot and sunny days with light breezes or calm air. In some areas, high ozone levels may represent transport from upwind regions; local weather conditions associated with transport may differ from place to place. Since hot and sunny summer days typically lead to high ozone, it is not surprising that cold and cloudy winter days see little ozone.

As mentioned, California's terrain also plays a role in promoting high levels of pollutants. The mountains that surround the San Joaquin Valley and those that form a barrier to the east of the Los Angeles area tend to retain air within these basins, which limits the dispersion of all pollutants, including ozone.

Meteorology affects particulate matter (PM), though some of its effects on PM differ from its effects on ozone. Ambient PM is comprised of primary PM that is directly emitted and secondary PM that forms in the atmosphere from chemical and physical processes. Primary PM includes dust and soot, while secondary PM includes particulate nitrates and sulfates. Some areas are subject to strong winds that lift dust into the air resulting in high concentrations of primary PM. On November 29, 1991, dry hurricane-force winds in the San Joaquin Valley created a massive dust storm and extremely high PM levels. In other situations, cold, calm, and humid air can promote the buildup of secondary PM. Relatively high PM levels in the South Coast and San Joaquin Valley commonly occur in the winter months under these meteorological conditions. Because winds disperse PM and rain washes PM out of the air, the lowest PM concentrations often occur on rainy winter days.

Meteorological data can indicate how year-to-year differences in factors related to pollution compare to their long-term averages. Data for temperatures, sunlight (cloud cover), and winds can help characterize a year with respect to the weather conditions related to pollution. An analysis of daily weather conditions in the South Coast Air Basin found that 1981, 1994, 1995, and 2003 had many days when the weather was likely to promote high levels of ozone, while 1986, 1987, 1991, and 1993 had few such days. A similar analysis of daily weather conditions from 1994 to 2004 in the San Joaquin Valley found 1994, 1996, 2001, 2002, and 2003 with higher than average numbers of days likely to promote high ozone levels, while 1997, 1998, and 1999 were found to have lower than average numbers of such days. Annual average PM concentrations are affected by the number of days in a year when conditions promote the development of high PM levels. In northern California, 1998 had many rainy days which helped produce low annual average PM values. The next year, however, was quite dry, and annual average PM concentrations increased.

A full accounting of the impact of weather on pollution levels is desirable but challenging. Although the scientific principles are reasonably well known, the needed data may not be available. For example, air temperatures from ground level to 1500 m above the ground are only measured at a few sites in the state twice each day. Nevertheless, work continues toward the day when meteorology can be accounted for in a practical and effective manner for most pollutants in most areas of the state.

The Web Resources Section provides information on how to access sources of meteorological data. Sources such as ARB's real-time Air Quality and Meteorological Information System (AQMIS) allow access to various wind parameters including wind speed/direction, temperature, humidity, and visibility.

Sources of Emissions in California

California is a diverse state with many sources of air pollution. To estimate the sources and quantities of pollution, the ARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources.

Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. Area-wide emissions are estimated by ARB and local air district staffs. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. Mobile source emissions are estimated by ARB staff with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. Natural sources are also estimated by the ARB staff and the air districts. These sources include biogenic hydrocarbons, geogenic hydrocarbons, natural wind-blown dust, and wildfires.

For the inventoried emission sources, the ARB compiles emission estimates for both the criteria pollutants and toxic air contaminants. Chapters 2 through 4 and Appendices A and B focus on five criteria pollutants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide. Emissions related to these criteria pollutants include reactive organic gases (ROG), oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x), ammonia (NH_3), particulate matter with an aerodynamic diameter of 10 microns or smaller (PM_{10}), and particulate matter with an aerodynamic diameter of 2.5 microns or smaller ($PM_{2.5}$).

While some pollutants, such as CO, are directly emitted, others are formed in the atmosphere from *precursor emissions*. Such is the case with ozone, which is formed in the atmosphere when ROG and NO_x precursor emissions react in the presence of sunlight. Particulate matter (PM), which includes PM_{10} and $PM_{2.5}$, is a complex pollutant that can either be directly emitted or formed in the atmosphere from precursor emissions. PM can form in the atmosphere from the reaction of gaseous precursors such as NO_x, ROG, SO_x, and ammonia. Examples of directly emitted PM include dust and soot.

Hydrocarbon is a general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive. Non-reactive hydrocarbons consist mostly of methane, which in turn consists of a single carbon atom and four hydrogen atoms. Emissions of *Total Organic Gases* and *Reactive Organic Gases* are two classes of hydrocarbons measured for California's emissions inventory. TOG includes all hydrocarbons, both reactive and non-reactive. In contrast, ROG includes only the reactive hydrocarbons.

In addition to the information about the criteria pollutants, Chapter 5 and Appendix C, focus on the ten TACs that pose the greatest potential health risk, primarily based on statewide ambient air quality data. These ten TACs are: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter. Excluding diesel particulate matter, the remaining nine TACs represent over 95 percent of the potential health risk as measured through the statewide TAC air monitoring network. Although diesel particulate matter is not currently monitored, emissions and modeled ambient concentrations indicate that diesel particulate matter has a higher health risk than the other nine compounds combined. It is important to note that there may be other compounds that pose a substantial risk, but have not been identified as a concern, for which data are not yet available, or are currently under review.

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Air Quality Monitoring

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. The ARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors. As shown in Figure 1-1, there are more than 250 criteria pollutant monitoring sites in California. Currently, the ARB also monitors ambient concentrations of toxic air contaminants (TACs) at 17 of these sites. In addition to the California sites, a few monitoring sites are located in Mexico. These sites were established in cooperation with the United States Environmental Protection Agency (U.S. EPA) and the Mexican government to monitor the cross-border transport of pollutants and pollutant precursors. Each year, more than ten million air quality measurements from all of these sites are collected and stored in a comprehensive air quality database maintained by the ARB. To ensure the integrity of the data, the ARB routinely conducts audits and reviews of the monitoring instruments and the resulting data.

Figure 1-1

California Air Basins

California contains a wide variety of climates, physical features, and emission sources. This variety makes the task of improving air quality complex, because what works in one area may not be effective in another area. To better manage common air quality problems, California is divided into 15 air basins, as shown in Figure 1-2 and Table 1-1. The ARB established the initial air basin boundaries during 1968.

An air basin generally has similar meteorological and geographical conditions throughout. To the extent possible, the air basin boundaries follow along political boundary lines and are defined to include both the source area and the receptor area. However, air masses can move freely from basin to basin. As a result, pollutants such as ozone and particulate matter can be transported across air basin boundaries, and interbasin transport is a reality that must be dealt with in air quality programs. Although established in 1968, the air basin boundaries have been changed several times over the years, to provide for better air quality management.

Figure 1-2

List of Counties in Each Air Basin

Great Basin Valleys Air Basin
- Alpine County
- Inyo County
- Mono County

Lake County Air Basin
- Lake County

Lake Tahoe Air Basin
- El Dorado County (portion)
- Placer County (portion)

Mojave Desert Air Basin
- Kern County (portion)
- Los Angeles County (portion)
- Riverside County (portion)
- San Bernardino County (portion)

Mountain Counties Air Basin
- Amador County
- Calaveras County
- El Dorado County (portion)
- Mariposa County
- Nevada County
- Placer County (portion)
- Plumas County
- Sierra County
- Tuolumne County

Table 1-1

North Central Coast Air Basin
- Monterey County
- San Benito County
- Santa Cruz County

North Coast Air Basin
- Del Norte County
- Humboldt County
- Mendocino County
- Sonoma County (portion)
- Trinity County

Northeast Plateau Air Basin
- Lassen County
- Modoc County
- Siskiyou County

Sacramento Valley Air Basin
- Butte County
- Colusa County
- Glenn County
- Placer County (portion)
- Sacramento County
- Shasta County
- Solano County (portion)
- Sutter County
- Tehama County
- Yolo County
- Yuba County

List of Counties in Each Air Basin

Salton Sea Air Basin
- Imperial County
- Riverside County (portion)

San Diego Air Basin
- San Diego County

San Francisco Bay Area Air Basin
- Alameda County
- Contra Costa County
- Marin County
- Napa County
- San Francisco County
- San Mateo County
- Santa Clara County
- Solano County (portion)
- Sonoma County (portion)

San Joaquin Valley Air Basin
- Fresno County
- Kern County (portion)
- Kings County
- Madera County
- Merced County
- San Joaquin County
- Stanislaus County
- Tulare County

Table 1-1 (continued)

South Central Coast Air Basin
- San Luis Obispo County
- Santa Barbara County
- Ventura County

South Coast Air Basin
- Los Angeles County (portion)
- Orange County
- Riverside County (portion)
- San Bernardino County (portion)

Criteria Air Pollutants

California and National Ambient Air Quality Standards

Very simply, an ambient air quality standard is the definition of "clean air." More specifically, a standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly. Both the California and federal governments have adopted health-based standards for the *criteria pollutants*, which include but are not limited to ozone, particulate matter (PM_{10} and $PM_{2.5}$), and carbon monoxide. U.S. EPA is currently proposing revisions to the national PM standards. Information on the proposal can be found on the U.S. EPA's website at *www.epa.gov/air/particles/actions.html*.

For most pollutants the State standards are more stringent than the national standards. The differences in the standards are generally explained by the different health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the State standards incorporate a margin of safety to protect sensitive individuals (a short list of the State and national ambient air quality standards can be found on page 20, while a complete list can be found on the ARB website at *www.arb.ca.gov/aqs/aqs.htm*). In general, the air quality standards are expressed as a measure of the amount of pollutant per unit of air. For example, the particulate matter standards are expressed as micrograms of particulate matter per cubic meter of air ($\mu g/m^3$).

Ozone

Ozone, a colorless gas which is odorless at ambient levels, is the chief component of urban smog. Ozone is not directly emitted as a pollutant, but is formed in the atmosphere when hydrocarbon and NO_x precursor emissions react in the presence of sunlight. Meteorology and terrain play major roles in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and cloudless skies provide the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often impacts a large area.

Ozone impacts lung function by irritating and damaging the respiratory system. In addition, ozone causes damage to vegetation, buildings, rubber, and some plastics. Recognizing the impacts of day-long exposure, the U.S. EPA promulgated a new 8-hour standard for ozone in 1997.

On April 15, 2004, U.S. EPA designated areas of the country that exceed the 8-hour ozone standard as nonattainment. The designations became effective on June 15, 2004, and incorporate air quality data for the years 2001-2003. The designations can be accessed at U.S. EPA's website at *www.epa.gov/ozonedesignations*. These designations will trigger new planning requirements for the national 8-hour standard. U.S. EPA's 8-hour ozone implementation rule can be accessed at *www.epa.gov/ttn/naaqs/ozone/o3imp8hr/finalrule.html*.

State Ozone Standard:
0.09 ppm for 1 hour,
not to be exceeded.

National Ozone Standards:
0.08 ppm for 8 hours,
not to be exceeded,
based on the fourth highest
concentration averaged
over three years.
0.12 ppm for 1 hour,
not to be exceeded more
than once per year.
(National 1-hour standard
revoked effective
June 15, 2005.)

Table 1-2

Particulate Matter (PM_{10} and $PM_{2.5}$)

Exposure to particulate matter aggravates a number of respiratory illnesses and may even cause early death in people with existing heart and lung disease. Both long-term and short-term exposure can have adverse health impacts. All particles with a diameter of 10 microns or smaller (PM_{10}) are harmful. For comparison, the diameter of a human hair is about 50 to 100 microns. PM_{10} includes the subgroup of finer particles with an aerodynamic diameter of 2.5 microns or smaller ($PM_{2.5}$). These finer particles pose an increased health risk because they can deposit deep in the lung and contain substances that are particularly harmful to human health.

PM_{10} is a mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, sulfates, and organic compounds; and complex mixtures such as diesel exhaust and soil. These substances may occur as solid particles or liquid droplets. Some particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere.

In 1982, the ARB adopted 24-hour average and annual average PM_{10} standards. National ambient air quality standards for PM_{10} have been in place since 1987. However, California's PM_{10} standards are more health-protective.

In June 2002, the ARB adopted recommendations to lower the level of the PM_{10} annual standard from 30 $\mu g/m^3$ to 20 $\mu g/m^3$ and established a new annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. The ARB plans to review short-term PM exposure studies in the future to determine if the current State 24-hour PM standards are adequately protective of public health. Additional information on the State PM standards is available on the ARB's website at *www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm.*

The U.S. EPA promulgated new national ambient air quality standards for $PM_{2.5}$ in 1997 to complement the national PM_{10} standards. In early 2004, the ARB transmitted recommendations for area designations for the national $PM_{2.5}$ standards to U.S. EPA. U.S. EPA issued final designations which became official in early 2005. State Implementation Plans are due in spring 2008. The U.S. EPA also proposed new standards for PMcoarse (particles with diameter between 2.5 and 10 microns) and revised $PM_{2.5}$ standards in December 2005.

State PM_{10} Standards:
50 µg/m^3 for 24 hours
not to be exceeded *and*
20 µg/m^3 annual arithmetic mean,
not to be exceeded.

State $PM_{2.5}$ Standard:
12 µg/m^3 annual arithmetic mean,
not to be exceeded.

National PM_{10} Standards:
150 µg/m^3 for 24 hours, not to be exceeded,
more than once per year *and*
50 µg/m^3 annual arithmetic mean
averaged over 3 years, not to be exceeded.

National $PM_{2.5}$ Standards:
65 µg/m^3 for 24 hours based on the
98th percentile concentration averaged
over three years, not to be exceeded *and*
15 µg/m^3 annual arithmetic mean
averaged over 3 years, not to be exceeded.

Table 1-3

Carbon Monoxide

Carbon monoxide is a colorless and odorless gas that is directly emitted as a by-product of combustion. The highest concentrations are generally associated with cold stagnant weather conditions that occur during winter. In contrast to ozone, which tends to be a regional pollutant, CO problems tend to be localized.

Carbon monoxide is harmful because it is readily absorbed through the lungs into the blood, where it binds with hemoglobin and reduces the ability of the blood to carry oxygen. As a result, insufficient oxygen reaches the heart, brain, and other tissues. The harm caused by CO can be critical for people with heart disease (angina), chronic lung disease, or anemia, as well as for unborn children. Even healthy people exposed to high levels of CO can experience headaches, fatigue, slow reflexes, and dizziness. Health damage caused by CO is of greater concern at high elevations where the air is less dense, aggravating the consequences of reduced oxygen supply. As a result, California has a more stringent CO standard for the Lake Tahoe Air Basin.

State CO Standards:
20 ppm for 1 hour *and*
9.0 ppm for 8 hours,
neither to be exceeded.

6 ppm for 8 hours
(Lake Tahoe Air Basin only),
not to be equaled or exceeded.

National CO Standards:
35 ppm for 1 hour *and*
9 ppm for 8 hours,
neither to be exceeded more than once per year.

Table 1-4

Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	—	—
	8 Hour	—	0.08 ppm (157 $\mu g/m^3$)[6]	Same as Primary Standard
Respirable Particulate Matter (PM_{10})	24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	20 $\mu g/m^3$	50 $\mu g/m^3$	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	65 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard
	1 Hour	0.25 ppm (470 $\mu g/m^3$)	—	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.030 ppm (80 $\mu g/m^3$)	—
	24 Hour	0.04 ppm (105 $\mu g/m^3$)	0.14 ppm (365 $\mu g/m^3$)	—
	3 Hour	—	—	0.5 ppm (1300 $\mu g/m^3$)
	1 Hour	0.25 ppm (655 $\mu g/m^3$)	—	—
Lead[7]	30 Day Average	1.5 $\mu g/m^3$	—	—
	Calendar Quarter	—	1.5 $\mu g/m^3$	Same as Primary Standard

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18,1997. Contact U.S. EPA for further clarification and current federal policies.
7. The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table 1-5

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California and National Area Designations

Both the California and federal governments use monitoring data to designate areas according to their attainment status for most of the pollutants with ambient air quality standards. The purpose of the designations is to identify those areas with air quality problems and thereby initiate planning efforts to make the air more healthful. There are three basic designation categories: nonattainment, attainment, and unclassified. In addition, the California (State) designations include a subcategory of the nonattainment designation, called nonattainment-transitional. The nonattainment-transitional designation is given to nonattainment areas that are making progress and nearing attainment.

A *nonattainment designation* indicates that the air quality violates an ambient air quality standard. Although a number of areas may be designated as nonattainment for a particular pollutant, the severity of the problem can vary greatly. For example, in two ozone nonattainment areas, the first area has a measured maximum concentration of 0.13 parts per million (ppm), while the second area has a measured maximum concentration of 0.23 ppm. While both areas are designated as nonattainment, it is obvious that the second area has a more severe ozone problem and will need a more stringent emission control strategy. To identify the severity of the problem and the extent of planning required, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe).

In contrast to nonattainment, an *attainment designation* indicates that the air quality does not violate the established standard. Under the federal Clean Air Act, nonattainment areas that are redesignated as attainment must develop and implement maintenance plans designed to assure continued compliance with the standard.

Finally, an *unclassified designation* indicates that there are insufficient data for determining attainment or nonattainment. The U.S. EPA combines unclassified and attainment into one designation for ozone, carbon monoxide, PM_{10} and $PM_{2.5}$. More detailed information on the area designation categories can be found on the ARB's website at *www.arb.ca.gov/desig/desig.htm*.

Ozone - State 1-Hour Area Designations

Some rural and coastal areas of California are designated as attainment for the State ozone standard. However, most of the rest of the State, including all of the major urban areas, have ozone concentrations that violate the State standard, and therefore, are designated as nonattainment. Although few areas have made sufficient progress to be redesignated as attainment for the State ozone standard, ozone precursor emissions continue to decline throughout California. As a result, air quality is improving, and more areas should eventually qualify for attainment status, as precursor emissions continue to be reduced statewide.

On April 28, 2005, the ARB approved the nation's most health protective ozone standard, with special consideration for children's health. The new 8-hour-average standard at 0.070 parts per million (ppm) will further protect California's most vulnerable population from the adverse health effects associated with ground-level ozone, or smog. The new 8-hour average ozone standard is the first of its kind in the state. The adopted standards are expected to go into effect January 2006.

Figure 1-3

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Ozone - National 8-Hour Area Designations

On April 15, 2004, the U.S. EPA made first time designations for the national 8-hour ozone standard. There are 15 nonattainment areas in California, including all of the State's five largest urban areas. In addition, a number of smaller counties and rural areas exceed the standard. An area violates the federal 8-hour ozone standard if the calculated fourth highest 8-hour concentration averaged over a three-year period exceeds the level of the standard at any monitoring site in the region.

The designations became effective on June 15, 2004, and triggered new planning requirements. State Implementation Plans will be due to the U.S. EPA by 2007. Until then, all of our programs designed to achieve the national 1-hour standard will bring us closer to attaining the national 8-hour standard. The U.S. EPA has issued an implementation rule in two phases that identifies many of the specific planning and control requirements for the 8-hour standard.

The national 1-hour ozone standard was revoked in June 2005 in order to focus on the more health protective 8-hour standard. The ARB will continue to provide air quality statistics and information on the 1-hour standard as it has been and continues to be the focus of many SIPs.

Figure 1-4

PM_{10} - State Area Designations

The majority of California is designated as nonattainment for the State PM_{10} standards. Three counties in the northern half of the State remain unclassified, and two areas, Lake County and Siskiyou County have been designated as attainment.

PM_{10} remains a widespread problem, and its causes are very diverse. Because of the variety of sources and the size and chemical make-up of the particles, the PM_{10} problem can vary considerably from one area to the next. In addition, high PM_{10} concentrations are seasonal, and the high season varies from area to area. For example, in some areas, windblown dust may contribute to high PM_{10} concentrations in the summer and fall, while in other areas, high concentrations due to secondary particles may occur during the winter. As a result, two areas with similar PM_{10} concentrations may have very different PM_{10} problems, and multiple control strategies are needed to effectively deal with these problems.

Figure 1-5

PM_{10} - National Area Designations

In contrast to the State PM_{10} designations, there are only two designation categories for the national PM_{10} standards: attainment/unclassified and nonattainment. Areas designated as nonattainment for the national PM_{10} standards are required to develop and implement plans designed to meet the standards. Although they are still designated as nonattainment, Sacramento, Mammoth Lakes, Trona (northwestern San Bernardino County), and the portion of San Bernardino County outside of the South Coast air basin now meet the national PM_{10} standards.

Figure 1-6

$PM_{2.5}$ - State Area Designations

Since California adopted the new $PM_{2.5}$ standard in 2002, this is the third year of area designations for the State $PM_{2.5}$ standard. Approximately half of California is designated as nonattainment for the State $PM_{2.5}$ standard, with Lake County, Lake Tahoe, and North Central Coast air basins designated as attainment. Nonattainment areas include all of the major urban areas as well as a few rural areas. Secondary formation of $PM_{2.5}$ and particles directly emitted from combustion processes are major contributors to high $PM_{2.5}$ concentrations in these areas.

California's programs to reduce ozone, PM_{10}, and diesel PM are helping reduce $PM_{2.5}$. In addition, as required by new legislation enacted in 2003 (Senate Bill 656), ARB has assembled a list of measures that can be used by air districts to further reduce PM and PM precursor emissions. This list is available on the web at *www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm*.

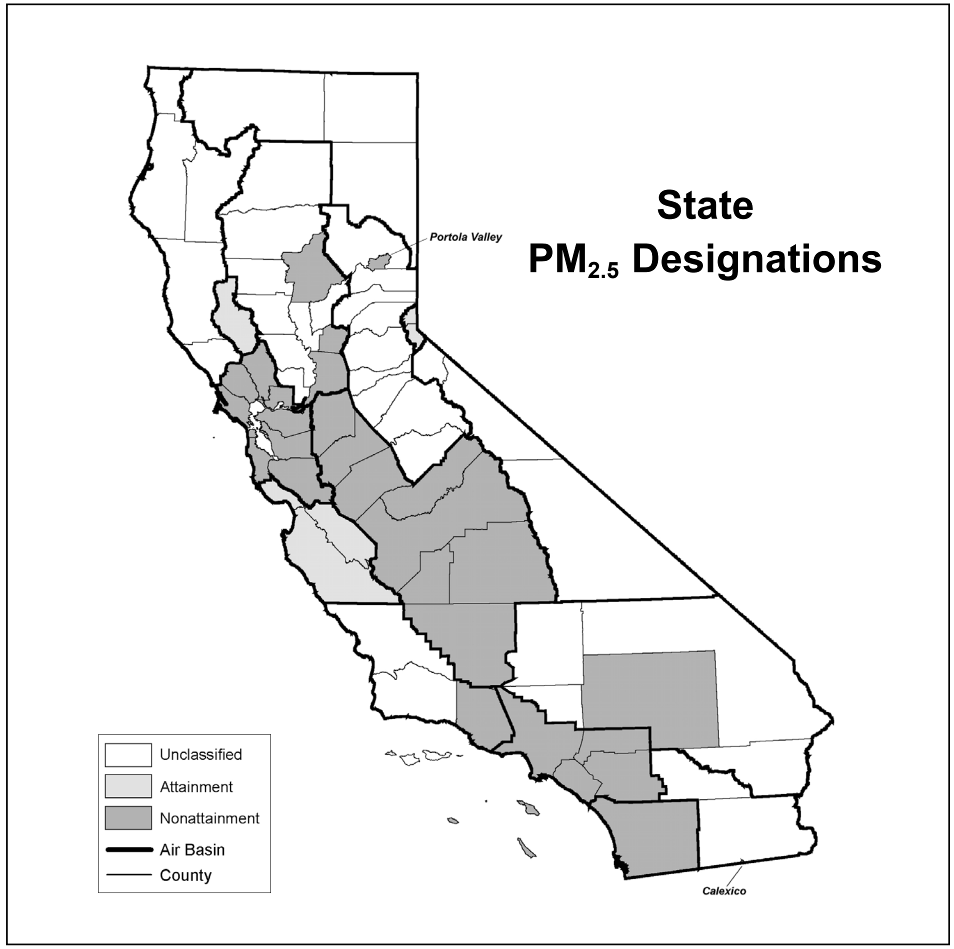
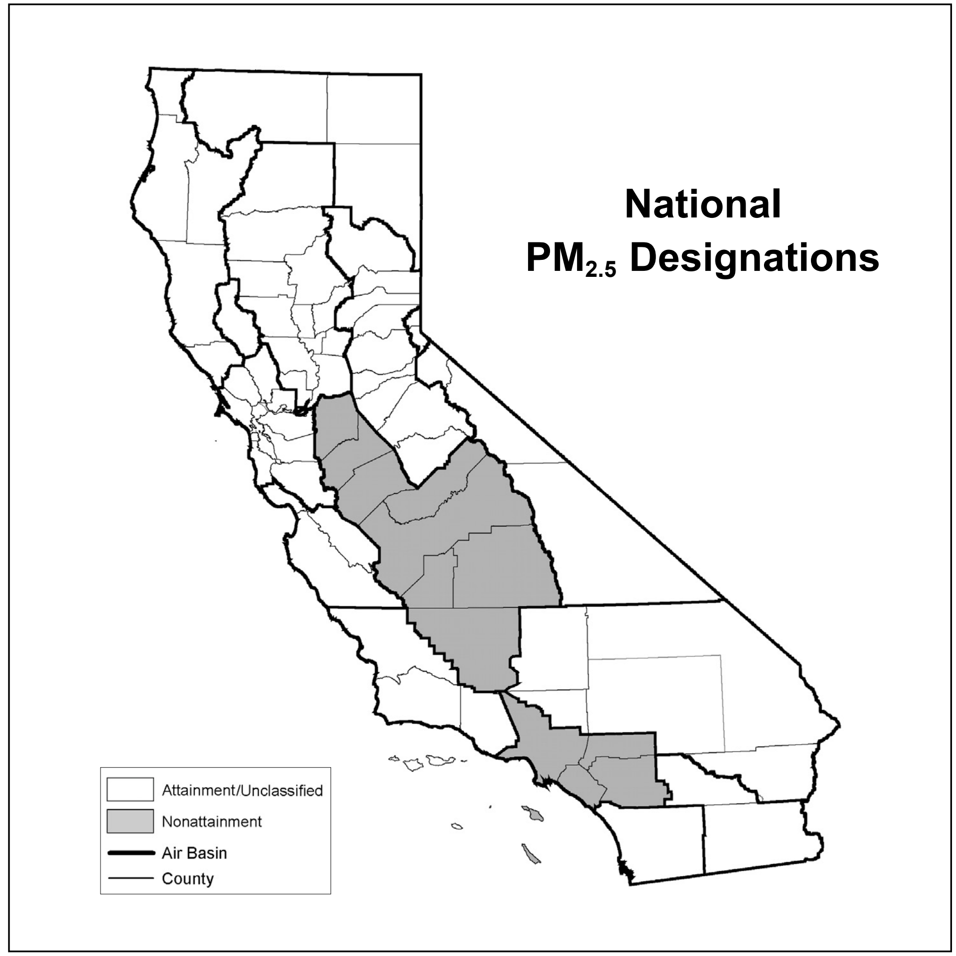


Figure 1-7

$PM_{2.5}$ - National Area Designations

The U.S. EPA promulgated first time area designations for $PM_{2.5}$ in early 2005. The San Joaquin Valley and South Coast air basins are designated as nonattainment. These air basins include major urban areas, as well as some rural areas. Reactions in the atmosphere from precursor gases emitted from combustion sources and direct particulate emissions from mobile sources and burning activities lead to high $PM_{2.5}$ concentrations in these areas. The remaining areas of the State are designated as attainment/unclassified.

State Implementation Plans for $PM_{2.5}$ nonattainment areas are scheduled for submittal in early 2008. Meanwhile, actions taken to reduce ozone, PM_{10}, and diesel PM will also help in reducing $PM_{2.5}$.



Designations Effective April 2005

Figure 1-8

Carbon Monoxide - State Area Designations

Currently, there is only one area in the state that does not meet the State CO standards: the City of Calexico, in Imperial County. California has made tremendous progress in reducing CO concentrations in the last ten years, during which a number of areas have been redesignated as attainment. Most recently, Los Angeles County was redesignated as attainment (in early 2005). Much of the progress in reducing ambient CO is attributable to motor vehicle controls and the introduction of cleaner fuels.

With respect to the nonattainment area, the problem in Calexico is unique in that this area is probably impacted by emissions from Mexico. Additional studies are needed to determine the most effective control strategy for the Calexico area.

Figure 1-9

Carbon Monoxide - National Area Designations

The U.S. EPA uses only two designation categories for CO: attainment/unclassified and nonattainment. All areas of California except the South Coast Air Basin are currently designated as attainment/unclassified for the national CO standards. The South Coast Air Basin now meets the requirements for attainment. However, this area has not been officially redesignated. Most CO is directly emitted by cars and trucks, and the ARB's motor vehicle controls should be sufficient to continue controlling the problem in the coming years. Although, the City of Calexico, in Imperial County, has carbon monoxide concentrations that violate the national standards, this area remains unclassified with respect to the national CO standards. There is a high likelihood that cross-border traffic contributes to the local CO problem in this area, and more study is needed to determine the most effective control strategy.

Figure 1-10

Toxic Air Contaminants

A toxic air contaminant or TAC is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

The Air Resources Board's TAC program traces its beginning to the criteria pollutant program in the 1960s. For many years, the criteria pollutant control program has been effective at reducing TACs since many volatile organic compounds and PM constituents are also TACs. During the 1980s, the public's concern over toxic chemicals heightened. As a result, citizens demanded protection and control over the release of toxic chemicals into the air. In response to public concerns, the California legislature enacted a 1983 law governing the release of TACs into the air. This law charges the Air Resources Board with the responsibility for identifying substances as TACs, setting priorities for control, adopting control strategies, and promoting alternative processes. The ARB has designated almost 200 compounds as TACs. Additionally, the ARB has implemented control strategies for a number of compounds that pose high health risk and show potential for effective control.

The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being PM from diesel-fueled engines (diesel particulate matter or diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions will vary depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other toxic air contaminants, diesel PM does not have ambient monitoring data because an accepted measurement method does not currently exist. However, the ARB has made preliminary concentration estimates for the State and its 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate outdoor concentrations of diesel PM. Details on the method and the resulting estimates for individual air basins can be found in the ARB report entitled: *"Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant -- Appendix III Part A Exposure Assessment,"* (April 1998). In addition to diesel PM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

Chapter 5 and Appendix C include information for ten TACs: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. These ten compounds pose the greatest known ambient risk based on air quality data, or concentration estimates in the case of diesel PM. The data are summarized for the State as a whole, for each of the five major air basins, and for each individual site within these air basins. Chapter 5 also discusses dioxins, based on available data. Note that other TACs may pose significant health risks, but sufficient air quality data are unavailable for these compounds.

Most of the TAC data in this almanac were obtained from monitors operated by the ARB. The majority of the information is presented on a pollutant-by-pollutant basis, with a focus on cancer risk. The available data represent average population exposures and may not represent the health risk near local sources. Localized impacts may involve exposure to different toxic air contaminants or to higher or lower concentrations than those represented by the ambient monitoring data. ARB participated in several studies to address localized impacts and community health issues to learn which communities are the most impacted and who in those communities are the most vulnerable. More information on these studies is available on the web at *www.arb.ca.gov/ch/ch.htm*.

Since the statewide TAC monitoring started in 1989, the ARB has substantially increased its knowledge about TACs, and the data indicate that control efforts have been effective in reducing public exposures and associated health risks. The future gradual phase-in of control strategies will likely continue to result in lower exposures for California's citizens. In the interim, work continues on identifying toxic substances and developing a better understanding of the risks they pose. Health experts still have only a limited knowledge of the mechanisms by which many toxic substances harm the body, and there is still much work to be done in researching health effects and quantifying cancer risks. Cooperative strategies between the ARB, businesses, and other State, local, and federal agencies will be a major focus of future control efforts.

Additional information on TACs may be found on the ARB website at *www.arb.ca.gov/toxics/toxics.htm*. Detailed information on the health effects of these pollutants, as well as many other toxic air contaminants, can be found in a report entitled: *"Toxic Air Contaminant Identification List-Summaries."* This report, dated September 1997, is available from the ARB Public Information Office and on the web at *www.arb.ca.gov/toxics/tac/intro.htm.*

Figure 1-11

Climate Change

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. The greenhouse gases (GHG) include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons. Climate research has identified other greenhouse agents that can drive climate change, particularly tropospheric ozone and atmospheric aerosols (particles containing sulfate, black carbon or other carbonaceous compounds).

Greenhouse gases absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history.

It is a fact that human activities have increased the atmospheric abundance of greenhouse gases. There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy. Already, some of these effects have been seen in California.

The United States has the highest emissions of greenhouse gases of any nation on Earth. California's transportation sector is the single largest contributor of GHGs in the State, producing close to 60% of all such emissions. In the absence of controls, the State's inventory of greenhouse gases would mirror the growth in population; transportation and land use trends in California would continue to increase greenhouse gas production.

California has been studying the impacts of climate change since 1988, when AB4420 was approved. This legislation directed the California Energy Commission, in consultation with the Air Resources Board and other agencies, to study the implications of global warming on California's environment, economy, and water supply. The Energy Commission was also directed to prepare and maintain the state's inventory of GHG emissions. More information on the Energy Commission's climate change activities can be found on the web at *www.energy.ca.gov/global_climate_change/index.html*.

In 2002, recognizing that global warming would impact California, AB1493 was approved. That bill directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. ARB staff's proposal implementing these regulations was approved by the Air Resources Board in September, 2004. These regulations will be reviewed and may be modified by the California Legislature. The average reduction of greenhouse gases from new California cars and light trucks will be about 22 percent in 2012 and about 30 percent in 2016, compared to today's vehicles. More information on ARB's Climate Change regulations can be found on the web at *www.arb.ca.gov/cc/cc.htm*.

California Air Quality Regulation

The responsibility for controlling air pollution in California is shared between 35 local air districts, the Air Resources Board, and the United States Environmental Protection Agency. The basic responsibilities of each of these entities are outlined below.

District Responsibilities:

- Control and permit industrial pollution sources (such as power plants, refineries, and manufacturing operations) and widespread area-wide sources (such as bakeries, dry cleaners, service stations, and commercial paint applicators).
- Adopt local air quality plans and rules.

Air Resources Board Responsibilities:

- Establish State ambient air quality standards.
- Adopt and enforce emission standards for mobile sources (except where federal law preempts ARB's authority), fuels, consumer products, and toxic air contaminants.
- Provide technical support to the local districts.
- Oversee local district compliance with State and federal law.
- Approve local air quality plans and submit State Implementation Plans to U.S. EPA.

United States Environmental Protection Agency Responsibilities:

- Establish national ambient air quality standards.
- Set emission standards for mobile sources, including those sources under exclusive federal jurisdiction (like interstate trucks, aircraft, marine vessels, locomotives, and farm/construction equipment).
- Oversee State air programs as they relate to the Federal Clean Air Act.
- Approve State Implementation Plans.

List of Air Pollution Contacts

Amador County Air Pollution Control District
All of Amador County
(209) 257-0112
www.amadorapcd.org

Antelope Valley Air Quality Management District
Northeast portion of Los Angeles County
(661) 723-8070
www.avaqmd.ca.gov

Bay Area Air Quality Management District
All of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, western portion of Solano County, and southern portion of Sonoma County
(415) 749-5000
www.baaqmd.gov

Butte County Air Quality Management District
All of Butte County
(530) 891-2882
www.bcaqmd.org

Calaveras County Air Pollution Control District
All of Calaveras County
(209) 754-6504
www.co.calaveras.ca.us/departments/env.asp

Colusa County Air Pollution Control District
All of Colusa County
(530) 458-0590
www.colusanet.com/apcd

El Dorado County Air Quality Management District
All of El Dorado County
(530) 621-6662
www.co.el-dorado.ca.us/emd/apcd

Feather River Air Quality Management District
All of Sutter and Yuba counties
(530) 634-7659
www.fraqmd.org

Glenn County Air Pollution Control District
All of Glenn County
(530) 934-6500
www.countyofglenn.net/Air_Pollution_Control/home_page.asp

Great Basin Unified Air Pollution Control District
All of Alpine, Inyo, and Mono counties
(760) 872-8211
gb1@greatbasinapcd.org
www.gbuapcd.org

Imperial County Air Pollution Control District
All of Imperial County
(760) 482-4606
www.imperialcounty.net

Kern County Air Pollution Control District
Eastern portion of Kern County
(661) 862-5250
www.kernair.org

Lake County Air Quality Management District
All of Lake County
(707) 263-7000
www.lcaqmd.net

Lassen County Air Pollution Control District
All of Lassen County
(530) 251-8110
lassenag@psln.com

Mariposa County Air Pollution Control District
All of Mariposa County
(209) 966-2220
air@@mariposacounty.org
www.mariposacounty.org/healthdepartment/index.html

Mendocino County Air Quality Management District
All of Mendocino County
(707) 463-4354
www.co.mendocino.ca.us/aqmd

Modoc County Air Pollution Control District
All of Modoc County
(530) 233-6419
apck@modoccounty.us

Mojave Desert Air Quality Management District
Northern portion of San Bernardino County and eastern portion of Riverside County
(760) 245-1661
www.mdaqmd.ca.gov

Monterey Bay Unified Air Pollution Control District
All of Monterey, San Benito and Santa Cruz counties
(831) 647-9411
www.mbuapcd.org

North Coast Unified Air Quality Management District
All of Del Norte, Humboldt, and Trinity counties
(707) 443-1580
www.ncuaqmd.org

Northern Sierra Air Quality Management District
All of Nevada, Plumas, and Sierra counties
(530) 274-9360
www.nccn.net/~nsaqmd

No. Sonoma County Air Pollution Control District
Northern portion of Sonoma County
(707) 433-5911
nsc@sonic.net

Placer County Air Pollution Control District
All of Placer County
(530) 889-7130
www.placer.ca.gov/airpollution/airpolut.htm

Sacramento Metro Air Quality Management District
All of Sacramento County
(916) 874-4800
www.airquality.org **or** *www.sparetheair.com*

San Diego County Air Pollution Control District
All of San Diego County
(858) 586-2600
www.sdapcd.org

San Joaquin Valley Unified Air Pollution Control District
All of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and western portion of Kern County
(559) 230-6000
www.valleyair.org

San Luis Obispo County Air Pollution Control District
All of San Luis Obispo County
(805) 781-5912
www.slocleanair.org

Santa Barbara County Air Pollution Control District
All of Santa Barbara County
(805) 961-8800
www.sbcapcd.org

Shasta County Air Quality Management District
All of Shasta County
(530) 225-5674
www.co.shasta.ca.us/Departments/Resourcemgmt/drm/aqmain.htm

Siskiyou County Air Pollution Control District
All of Siskiyou County
(530) 841-4029
ebeck@co.siskiyou.ca.us
www.co.siskiyou.ca.us/agcomm/airpollution.htm

South Coast Air Quality Management District
Los Angeles County except for portion covered by Antelope Valley APCD, all of Orange County, western portion of San Bernardino County, and western portion of Riverside County
(909) 396-2000
www.aqmd.gov

Tehama County Air Pollution Control District
All of Tehama County
(530) 527-3717
www.tehcoapcd.net

Tuolumne County Air Pollution Control District
All of Tuolumne County
(209) 533-5693
bsandman@co.tuolumne.ca.us
www.tuolumnecounty.ca.gov

Ventura County Air Pollution Control District
All of Ventura County
(805) 645-1400
www.vcapcd.org

Yolo-Solano Air Quality Management District
All of Yolo County and eastern portion of Solano County
(530) 757-3650
www.ysaqmd.org

Milestones in California's Emission Control Programs

Historical Milestones:

1963: First vehicle emission control in the country – positive crankcase ventilation required to reduce evaporative emissions.

1966: First tailpipe emission standards for hydrocarbons (HC) and carbon monoxide (CO).

1971: First oxides of nitrogen (NO_x) standards for cars and light trucks.

1973: First heavy-duty diesel truck standards.

1975: Two-way catalytic converters first used to control HC and emissions from cars.

1976: "Unleaded" gasoline first offered for sale, with reduced lead levels.

Three-way catalyst first used to control NO_x, HC, and CO emissions from cars.

1984: California Smog Check program implemented to identify and repair ineffective emission control systems on cars and light-trucks.

1988: California Clean Air Act is enacted, setting forth the framework for meeting State ambient air quality standards.

1992: California's reformulated gasoline introduced – reducing evaporative emissions, phasing out lead in gasoline, and requiring wintertime oxygenates to reduce CO formation.

First consumer product regulations take effect, regulating HC emissions from aerosol antiperspirants and deodorants.

1993: Cleaner diesel fuel launched, reducing emissions of diesel particulate matter, sulfur dioxide, and NO_x.

Regulations to limit HC emissions from consumer products such as hairspray, windshield washer fluid, and air fresheners take effect.

1994: Low emission vehicle regulations to further reduce emissions from cars and light trucks take effect.

1996: Cleaner burning gasoline debuts with emission benefits equivalent to removing 3.5 million cars from California roads.

Regulations reducing HC emissions from spray paint take effect.

1998: Tighter standards for California diesel trucks and buses take effect.

Revamped Smog Check II program implemented.

1999: ARB acted to phaseout MTBE in gasoline.

2000: Tighter emission standards for off-road diesel equipment, such as tractors and generators, take effect nationwide.

More stringent California standards for the small engines used in lawn and garden equipment take effect.

Diesel Risk Reduction Plan adopted.

2001: First California standards for large spark ignition off-road engines such as forklifts and pumps take effect.

More stringent standards for pleasure boats and personal watercraft sold in California begin.

Limits on HC emissions from products such as carpet and upholstery cleaners take effect.

2002: Emission standards for new heavy-duty diesel trucks are cut in half, nationwide.

2003: New emission standards for inboard marine engines sold in California take effect.

2004: Regulations to further reduce emissions from cars (and require light-trucks and sport-utility vehicles to meet the same emission standards as cars) take effect in California.

MTBE in California gasoline is fully phased out.

Tighter standards for on-road motorcycles begin.

2005: Limits on HC emissions from paint removers take effect.

Upcoming Milestones:

2006: Low sulfur diesel fuel required nationwide.

Regulations requiring cleaner fuels in ocean-going ships, auxiliary engines, and cleaner port-side equipment take effect.

2007: Tighter emission standards for heavy-duty diesel trucks take effect nationwide.

2009: Greenhouse gas emission standards for passenger cars and light trucks.

2011: Tighter emission standards for off-road diesel equipment.

Web Resources (www.arb.ca.gov/californiaalmanac)

Much of the information used to develop the Almanac is accessible through a variety of databases and tools available on the ARB website at *www.arb.ca.gov/californiaalmanac*.

Data

Real-time Air Quality Data - Air Quality and Meteorological Information System (AQMIS2) - Allows access to near real-time air quality and meteorological data. These data are available in tabular summary reports.

Historical Air Quality Data - Aerometric Data Analysis and Management System (iADAM) - Allows access to historical data (data for record) in tabular summary reports or displayed as graphs.

Emission Inventory Data - Allows access to historical and projected emissions, vehicle activity, and human population. Data are available for 2005, as well as for the years 1975-2020 at five year intervals.

Facility Search Engine - Allows users to locate criteria or toxics emissions data for a specific facility.

Top 25 Source Categories - Provides users with emissions for the top 25 highest emitting source categories by geographic area.

Community Level Emissions - Community Health Air Pollution Information System (CHAPIS) - Allows users to query and view emissions using a map interface.

Toxics Emission Factors - California Air Toxics Emission Factor database (CATEF) - Provides over 2000 emission factors to estimate toxic air emissions for specific industrial processes or emissions.

Information

Area Designations - Provides information regarding the designation of areas in California with respect to the State ambient air quality standards.

Biomass Burning Alternatives - Provides information on alternatives to burning and helpful information on service providers in this effort.

Central California Air Quality Studies (CCAQS) - Comprises two studies with the goal of providing an improved understanding of particulate matter and visibility in central California.

Outdoor residential waste burning information - Provides information on regulations for outdoor residential waste burning and includes resources on alternatives to burning.

Air Quality Data Quality Assurance Site Index - Air monitoring web site that allows the user to gain access to the most recent quality assurance information on any particular air monitoring site. This information consists of pollutants monitored, location, operation information, and photos of the site if available.

Transport - Information on the movement of ozone and ozone precursors between basins or regions and established mitigation requirements.

Glossary of Air Quality Terms

Air: So called "pure" air is a mixture of gases containing about 78 percent nitrogen; 21 percent oxygen; less than one percent of carbon dioxide, argon, and other gases; and varying amounts of water vapor.

Air Basin: A land area with generally similar meteorological and geographic conditions throughout. To the extent possible, air basin boundaries are defined along political boundary lines and include both the source and receptor areas. California is currently divided into 15 air basins.

Air District: A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts.

Air Monitoring: Sampling for and measuring of pollutants present in the atmosphere.

Air Pollution: Degradation of air quality resulting from unwanted chemicals or other materials occurring in the air.

Air Pollution Control District (APCD): An agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors.

Air Quality Management District (AQMD): A group of counties or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region.

Air Quality Management Plan (AQMP): A plan prepared by an APCD / AQMD, for a county or region designated as a nonattainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. AQMPs are incorporated into the State Implementation Plan (SIP).

Air Quality Standard (AQS): The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and / or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

Ambient Air Quality Standards (California-CAAQS or National-NAAQS): Health- and welfare-based standards for outdoor air which identify the maximum acceptable average concentrations of air pollutants during a specified period of time.

Area-wide Sources (also known as "Area Sources"): Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and woodstoves) that are typically associated with homes and non-industrial sources. Area-wide sources do not include mobile sources. The California Clean Air Act requires air districts to include area-wide sources in the development and implementation of their Air Quality Maintenance Plan. Under the federal air toxics program, an area-wide source is defined as any source that emits less than 10 tons per year of a single hazardous air pollutant (HAP) or 25 tons per year of all HAPs.

Attainment Area: A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards. An area may be an attainment area for one pollutant and a nonattainment area for others.

California Clean Air Act (CCAA): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local air districts in violation of the CAAQS must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date.

Criteria Air Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, and $PM_{2.5}$.

Climate Change: A change in the temperature of the earth's troposphere. Climate change has occurred in the past as a result of natural influences, but the term is most often used in reference to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases.

Emission Inventory: An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.

Emission Standard: The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack.

Environmental Justice: The fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies.

Expected Peak Day Concentration (EPDC): See Peak Indicator

Exceedance: A measured level of an air pollutant higher than the national or state ambient air quality standards.

Exposure: The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

Exposure Assessment: Measurement or estimation of the magnitude, frequency, duration and route of exposure to a substance for the populations of interest.

Federal Clean Air Act (FCAA): A federal law passed in 1970 and amended in 1974, 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, mobile and stationary control measures, air toxics standards, acid rain control measures, and enforcement provisions.

Hydrocarbon: A general term used to describe compounds comprised of hydrogen and carbon atoms. Hydrocarbons are classified as to how photochemically reactive they are: relatively reactive or relatively non-reactive.

Mean: Average.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes (compare with Stationary Sources).

Nonattainment Area: A geographic area that does not meet either a State or federal standard for a given pollutant. This area usually consists of an air basin or county, but can be any geographic area defined by the U.S. EPA.

Nonattainment Transitional: A subcategory of the nonattainment designation category for State standards that signals progress and implies the area is nearing attainment.

Peak Indicator: Using a statistical process, it is a site-specific and pollutant-specific value that represents the concentration expected to be exceeded once per year, on average, based on the distribution of data for the monitoring site. The calculation procedure uses data collected at the monitoring site for a three-year period. For example, the 2004 peak indicator is calculated using data for the years 2002, 2003, and 2004. The site with the highest peak indicator for a region is used for the long-term trends in the almanac. It is also referred to as the California Design Value or the Expected Peak Day Concentration.

Precursor Emissions: Emissions which form pollutants in the atmosphere due to the reaction of themselves with each other or with sunlight. Ozone is formed in the atmosphere when hydrocarbon and NO_x react in the presence of sunlight. Particulate Matter (PM) is a complex pollutant that can be formed from the reaction of gaseous precursors such as NO_x, ROG, SO_x, and ammonia.

Reactive Organic Gas (ROG): A reactive chemical gas, composed of non-methane hydrocarbons that may contribute to the formation of smog. Also sometimes referred to as non-methane organic gases (NMOGs).

Risk Assessment: An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

State Implementation Plan (SIP): A plan prepared by states and submitted to U.S. EPA describing how each area will attain and maintain national ambient air quality standards. SIPs include the technical foundation for understanding the air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and modeling analyses.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants (compare with Mobile Sources).

Total Organic Gases (TOG): All gases consisting of substances containing carbon, except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

Toxic Air Contaminant (TAC): An air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code section 39650, et seq.) than pollutants subject to CAAQSs. Health effects from TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Vehicle Miles Traveled (VMT): The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly, or yearly) or over a specified road or transportation corridor.

Volatile Organic Compounds (VOC): A group of chemicals that react in the ambient air with nitrogen oxides in the presence of heat and sunlight to form ozone. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane or other compounds determined by U.S. EPA to have negligible photochemical reactivity.

Chapter 2

Current Emissions and Air Quality -- Criteria Pollutants

Introduction

This chapter provides statewide information on current emissions and air quality, relative to the State and national ambient air quality standards (see Chapter 5 for information on toxic air contaminants). This section gives a national perspective on how California's air quality compares with that in other areas of the nation. The second section of this chapter includes a summary table of the Statewide Emission Inventory. The table shows emissions data by three major source categories: stationary sources, area-wide sources, and mobile sources. Emissions data for natural sources are provided in Appendix E. The remaining sections of this Chapter provide information on emissions (including the high emitting facilities) and air quality on a statewide basis. This information is organized by pollutant, for ozone (and ozone precursor emissions), particulate matter (PM_{10} and $PM_{2.5}$), CO, and ammonia (NH_3).

Emissions are reported as annual averages, in tons per day. For most sources and pollutants that are not seasonal, this describes emissions very well. However, for some pollutants such as PM_{10} and $PM_{2.5}$, annual averages do not give an accurate indication of the seasonal nature of emissions. Therefore, they may appear to be artificially low. Many sources of PM_{10} and $PM_{2.5}$ are seasonal, including wildfires, agricultural processes, residential wood combustion, or dust storms in the Owens Valley and Mono Lake areas. Many sources of PM_{10} and $PM_{2.5}$ can also be very localized, and basinwide annual averages do not give any information about these sources.

State and local agencies have implemented many control measures during the last three decades to improve air quality. As a result, there has been a steady decline in both emissions and pollutant concentrations. However, two criteria pollutants, ozone and particulate matter, still pose air quality problems. Significant progress has been made towards attainment of CO standards. With the exception of the City of Calexico in Imperial County, both the national and State CO standards have been attained statewide. Although substantial progress has been made in reducing ozone and PM levels, it will be a challenge to reduce emissions sufficiently to attain these standards statewide.

Figure 2-1 shows the national 8-hour ozone design values for the top 15 urban areas in the nation, based on data for 2002 to 2004. The design values in all these areas exceed the national 8-hour standard of 0.08 ppm. Seven of the top 15 areas are located in California, with the Los Angeles South Coast Air Basin and San Joaquin Valley areas ranking first and second. This table indicates the severity of the ozone air quality problem in California.

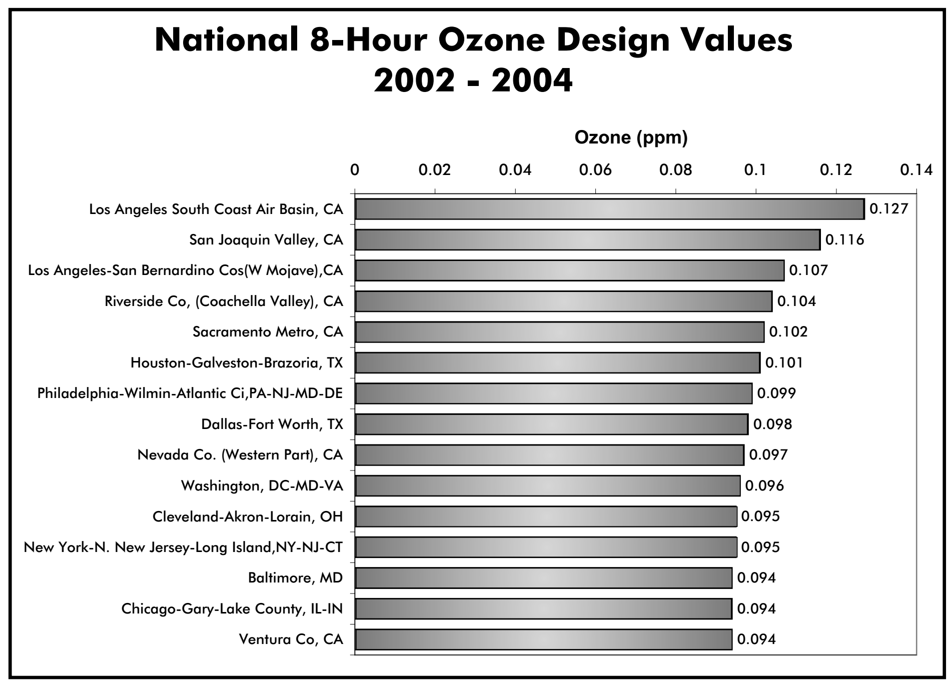


Figure 2-1

Attainment of the standards for particulate matter (PM_{10} and $PM_{2.5}$) is also a significant problem. The PM_{10} problem is most prevalent in the western United States. Eight western areas are classified as serious PM_{10} nonattainment areas. Half of these, the Coachella Valley, the Owens Valley, the San Joaquin Valley, and the South Coast Air Basin, are located in California. In contrast, the $PM_{2.5}$ problem is prevalent in both the eastern United States and in California. Because of the complex nature of the PM problem, it will be many years before the standards are attained.

Carbon monoxide poses much less of a problem here in California than PM. Figure 2-2 shows the four areas in the nation that averaged at least one day with CO concentrations above the level of the national standard during 2002 to 2004. The Calexico area (Imperial County) ranked third. Calexico is the only area in California where the national CO standard is still violated. However, the Calexico area has made considerable progress towards attainment. Peak levels have declined significantly in the last five years, as have the number of days that the standard is exceeded. The State's stringent motor vehicle emission standards and clean fuels programs continue to be effective in reducing ambient CO concentrations.

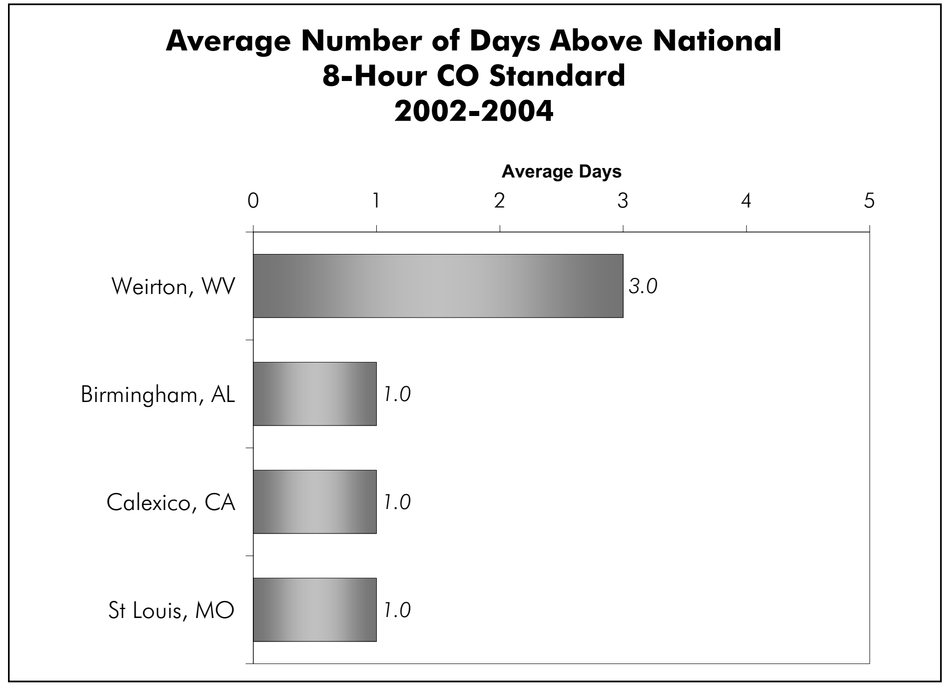


Figure 2-2

2005 Statewide Emission Inventory
Summary

Division Major Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3 **
	Emissions (tons/day, annual average)						
Stationary Sources	**473**	**372**	**420**	**112**	**136**	**91**	**63**
Fuel Combustion	48	299	324	38	36	34	7
Waste Disposal	14	2	3	1	2	1	47
Cleaning and Surface Coatings	210	1	0	0	1	1	2
Petroleum Production and Marketing	145	23	9	46	2	2	2
Industrial Processes	55	48	84	28	94	52	5
Area-Wide Sources	**751**	**2719**	**112**	**11**	**1939**	**654**	**504**
Solvent Evaporation	448	0	0	0	0	0	30
Miscellaneous Processes	303	2719	112	11	1939	654	474
Mobile Sources	**1207**	**10674**	**2687**	**179**	**138**	**115**	**101**
Passenger Vehicles	349	3324	303	2	17	10	59
Light and Medium Duty Trucks	291	3151	357	2	14	9	39
Heavy Duty Trucks	95	733	771	8	16	14	3
Other On-road	35	421	88	1	2	2	1
Aircraft and Trains	46	300	216	20	13	12	-
Ships and Commercial Boats***	17	43	339	144	25	24	-
Recreational Boats and Vehicles	158	916	37	1	11	8	-
Off-Road Equipment	169	1664	455	1	32	26	-
Other Off-road	46	121	123	1	8	8	-
Total Statewide - All Sources ****	***2430***	***13766***	***3219***	***302***	***2213***	***860***	***670***

* Includes directly emitted particulate matter only.
** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.
*** An improved statewide methodology has been developed for estimating emissions from ship and commercial boat activities. This results in increased emissions for all pollutants for these categories.
**** Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM_{10}.

Table 2-1

2005 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
	Emissions (tons/day, annual average)						
Stationary Sources (division total)	**473**	**372**	**420**	**112**	**136**	**91**	**63**
Fuel Combustion (major category total)	48	299	324	38	36	34	7
- Electric Utilities	4	50	25	3	6	6	4
- Cogeneration	4	46	27	2	4	4	2
- Oil And Gas Production (Combustion)	15	21	22	2	1	1	0
- Petroleum Refining (Combustion)	2	19	25	12	3	3	1
- Manufacturing And Industrial	6	59	94	13	7	7	2
- Food And Agricultural Processing	5	53	35	2	3	3	0
- Service And Commercial	10	41	76	3	7	6	0
- Other (Fuel Combustion)	2	8	20	1	5	4	0
Waste Disposal (major category total)	14	2	3	1	2	1	47
- Sewage Treatment	1	0	0	0	0	0	1
- Landfills	8	1	1	0	1	0	12
- Incinerators	1	1	2	0	1	1	0
- Soil Remediation	0	0	0	-	0	0	-
- Other (Waste Disposal)	4	0	0	-	0	0	35
Cleaning And Surface Coatings (major category total)	210	1	0	0	1	1	2
- Laundering	1	0	0	-	-	-	-
- Degreasing	38	-	-	-	0	0	0
- Coatings And Related Process Solvents (sub-category total)	130	0	0	0	1	1	0
- Auto Marine, & Aircraft	*24*	*0*	*0*	*0*	*0*	*0*	*0*
- Paper & Fabric	*3*	*0*	*0*	*0*	*0*	*0*	*0*
- Metal, Wood, & Plastic	*31*	*0*	*0*	*0*	*0*	*0*	*0*
- Other	*71*	*0*	*0*	*0*	*0*	*0*	*0*

* Includes directly emitted particulate matter only.

** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.

Table 2-2

2005 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
Stationary Sources (division total) (continued)							
Cleaning And Surface Coatings (major category) (continued)							
- Printing	17	0	0	-	0	0	0
- Adhesives And Sealants	20	-	-	-	0	-	-
- Other (Cleaning And Surface Coatings)	5	0	0	0	0	0	2
Petroleum Production And Marketing (major category total)	145	23	9	46	2	2	2
- Oil And Gas Production	44	1	3	0	0	0	0
- Petroleum Refining	16	21	6	46	2	2	2
- Petroleum Marketing (sub-category total)	85	1	0	-	0	0	-
- Fuel Distribution Losses	*3*	*0*	*0*	*0*	*0*	*0*	*0*
- Fuel Storage Losses	*2*	*0*	*0*	*0*	*0*	*0*	*0*
- Vehicle Refueling	*47*	*0*	*0*	*0*	*0*	*0*	*0*
- Other	*32*	*0*	*0*	*0*	*0*	*0*	*0*
- Other (Petroleum Production And Marketing)	0	-	-	-	-	-	0
Industrial Processes (major category total)	55	48	84	28	94	52	5
- Chemical	20	1	2	3	4	4	0
- Food And Agriculture	19	2	9	1	15	7	0
- Mineral Processes	4	32	53	18	52	25	0
- Metal Processes	1	1	1	0	1	1	-
- Wood And Paper	3	1	2	0	14	9	-
- Glass And Related Products	0	1	10	4	1	1	1
- Electronics	1	-	-	-	0	0	-
- Other (Industrial Processes)	7	9	7	1	7	6	4

* Includes directly emitted particulate matter only.
** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.

Table 2-2 (continued)

2005 Statewide Emission Inventory by Sub-Category

Division Major Category Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10}*	$PM_{2.5}$ *	NH_3**
Area-Wide Sources (division total)	**751**	**2719**	**112**	**11**	**1939**	**654**	**504**
Solvent Evaporation (major category total)	448	0	0	0	0	0	30
- Consumer Products	259	-	-	-	-	-	-
- Architectural Coatings And Related Process Solvent (sub-category total)	102	-	-	-	-	-	-
- Architectural Coating	*86*	*0*	*0*	*0*	*0*	*0*	*0*
- Thinning & Cleanup Solvents	*15*	*0*	*0*	*0*	*0*	*0*	*0*
- Pesticides/Fertilizers (sub-category total)	55	-	-	-	-	-	30
- Farm Use	*53*	*0*	*0*	*0*	*0*	*0*	*0*
- Commercial Use	*2*	*0*	*0*	*0*	*0*	*0*	*0*
- Asphalt Paving / Roofing	31	-	-	-	0	0	-
- Other (Solvent Evaporation)	-	-	-	-	-	-	-
Miscellaneous Processes (major category total)	303	2719	112	11	1939	654	474
- Residential Fuel Combustion (sub-category total)	54	791	75	4	114	110	6
- Wood Combustion	*51*	*762*	*10*	*1*	*109*	*105*	*6*
- Cooking And Space Heating	*3*	*25*	*55*	*2*	*5*	*5*	*0*
- Other	*1*	*4*	*10*	*0*	*1*	*1*	*0*
- Farming Operations (sub-category total)	120	-	-	-	170	51	411
- Tilling,Harvesting, & Growing	*0*	*0*	*0*	*0*	*133*	*30*	*0*
- Livestock	*120*	*0*	*0*	*0*	*37*	*22*	*411*

* Includes directly emitted particulate matter only.

** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.

Table 2-2 (continued)

2005 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
Area-Wide Sources (division total) (continued)							
Miscellaneous Processes (major category) (continued)							
- Construction And Demolition (sub-category total)	-	-	-	-	196	41	-
- Building	*0*	*0*	*0*	*0*	*108*	*22*	*0*
- Road Construction Dust	*0*	*0*	*0*	*0*	*87*	*18*	*0*
- Paved Road Dust	-	-	-	-	411	69	-
- Unpaved Road Dust	-	-	-	-	521	130	-
- Fugitive Windblown Dust (sub-category total)	-	-	-	-	306	67	-
- Farm Lands	*0*	*0*	*0*	*0*	*175*	*39*	*0*
- Pasture Lands	*0*	*0*	*0*	*0*	*18*	*4*	*0*
- Unpaved Roads	*0*	*0*	*0*	*0*	*113*	*24*	*0*
- Fires	1	10	0	-	1	1	-
- Managed Burning And Disposal (sub-category total)	122	1917	37	7	192	168	2
- Agricultural Burning ***	*17*	*166*	*7*	*0*	*20*	*19*	*2*
- Non-Agricultural Burning	*104*	*1744*	*29*	*7*	*172*	*149*	*0*
- Other	*1*	*7*	*0*	*0*	*1*	*1*	*0*
- Cooking	7	0	-	-	26	16	-
- Other (Miscellaneous Processes)	0	1	0	-	1	1	56

* Includes directly emitted particulate matter only.
** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.
*** Agricultural burning includes the prescribed burning of prunings and field crops. Non-agricultural burning includes prescribed burning activities associated with range improvement, forest management, wildland fire use, and weed abatement.

Table 2-2 (continued)

2005 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
	Emissions (tons/day, annual average)						
Mobile Sources (division total)	**1207**	**10674**	**2687**	**179**	**138**	**115**	**101**
On-Road Motor Vehicles (major category total)	770	7629	1518	12	50	34	101
- Light Duty Passenger (sub-category total)	349	3324	303	2	17	10	59
- Non-Evaporative	*197*	*3323*	*301*	*2*	*17*	*10*	*59*
- Evaporative	*151*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*1*	*2*	*0*	*0*	*0*	*0*
- Light Duty Trucks(<3750 lbs.) (sub-category total)	131	1412	125	1	5	3	15
- Non-Evaporative	*72*	*1410*	*121*	*1*	*5*	*3*	*15*
- Evaporative	*58*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*2*	*4*	*0*	*0*	*0*	*0*
- Light Duty Trucks (>3750 lbs) (sub-category total)	103	1144	145	1	7	4	17
- Non-Evaporative	*61*	*1143*	*143*	*1*	*6*	*4*	*17*
- Evaporative	*42*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*1*	*2*	*0*	*0*	*0*	*0*
- Medium Duty Trucks (sub-category total)	57	595	86	0	3	2	7
- Non-Evaporative	*36*	*594*	*83*	*0*	*3*	*2*	*7*
- Evaporative	*20*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*1*	*3*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (<10000 lbs) (sub-category total)	18	115	17	0	0	0	1
- Non-Evaporative	*10*	*115*	*17*	*0*	*0*	*0*	*1*
- Evaporative	*8*	*0*	*0*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (>10000 lbs) (sub-category total)	5	34	6	0	0	0	0
- Non-Evaporative	*2*	*34*	*6*	*0*	*0*	*0*	*0*
- Evaporative	*3*	*0*	*0*	*0*	*0*	*0*	*0*
- Medium Heavy Duty Gas Trucks (sub-category total)	26	204	21	0	0	0	0
- Non-Evaporative	*17*	*204*	*21*	*0*	*0*	*0*	*0*
- Evaporative	*10*	*0*	*0*	*0*	*0*	*0*	*0*

* Includes directly emitted particulate matter only.

** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.

Table 2-2 (continued)

2005 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	Emissions (tons/day, annual average)						
	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
On-Road Motor Vehicles (major category) (continued)							
- Heavy Heavy Duty Gas Trucks (sub-category total)	20	256	39	0	0	0	0
- Non-Evaporative	*15*	*256*	*39*	*0*	*0*	*0*	*0*
- Evaporative	*5*	*0*	*0*	*0*	*0*	*0*	*0*
- Light Heavy Duty Gas Trucks (<10000 lbs)	1	3	19	0	0	0	0
- Light Heavy Duty Gas Trucks (>10000 lbs)	1	3	15	0	0	0	0
- Medium Heavy Duty Diesel Trucks	4	25	138	2	4	3	0
- Heavy Heavy Duty Diesel Trucks	21	94	515	6	11	9	0
- Motorcycles (Mcy) (sub-category total)	20	166	5	-	0	0	0
- Non-Evaporative	*14*	*166*	*5*	*0*	*0*	*0*	*0*
- Evaporative	*6*	*0*	*0*	*0*	*0*	*0*	*0*
- Heavy Duty Diesel Urban Buses	2	9	45	0	1	1	-
- Heavy Duty Gas Urban Buses (sub-category total)	6	69	8	0	0	0	0
- Non-Evaporative	*6*	*69*	*8*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- School Buses (sub-category total)	2	19	15	0	1	0	0
- Non-Evaporative	*1*	*16*	*1*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*1*	*3*	*14*	*0*	*1*	*0*	*0*
- Motor Homes (sub-category total)	6	158	15	0	0	0	0
- Non-Evaporative	*5*	*158*	*12*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*0*	*0*	*3*	*0*	*0*	*0*	*0*

* Includes directly emitted particulate matter only.
** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.

Table 2-2 (continued)

2005 Statewide Emission Inventory by Sub-Category

Division / Major Category / Sub-Category	ROG	CO	NO_x	SO_x	PM_{10} *	$PM_{2.5}$ *	NH_3**
	Emissions (tons/day, annual average)						
Mobile Sources (division total) (continued)							
Other Mobile Sources (major category total)	436	3045	1169	166	88	80	0
- Aircraft	37	267	55	3	8	7	-
- Trains	8	33	162	17	5	5	-
- Ships And Commercial Boats ***	17	43	339	144	25	24	-
- Residual Oil	*6*	*17*	*222*	*138*	*19*	*18*	*0*
- Diesel	*7*	*16*	*78*	*1*	*4*	*3*	*0*
- Gasoline	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Other Fuel	*3*	*10*	*39*	*5*	*3*	*3*	*0*
- Recreational Boats	107	653	32	0	10	8	-
- Non-Evaporative	*100*	*652*	*30*	*0*	*10*	*8*	*0*
- Evaporative	*6*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*1*	*1*	*3*	*0*	*0*	*0*	*0*
- Off-Road Recreational Vehicles (sub-category total)	51	263	5	0	0	0	-
- Snowmobiles	*44*	*140*	*3*	*0*	*0*	*0*	*0*
- Motorcycles	*2*	*45*	*0*	*0*	*0*	*0*	*0*
- All-Terrain Vehicles	*2*	*42*	*0*	*0*	*0*	*0*	*0*
- Four-Wheel Drive Vehicles	*3*	*37*	*2*	*0*	*0*	*0*	*0*
- Off-Road Equipment (sub-category total)	169	1664	455	1	32	29	-
- Lawn And Garden Equipment	*101*	*779*	*15*	*1*	*3*	*2*	*0*
- Non-Evaporative	*70*	*776*	*9*	*0*	*3*	*2*	*0*
- Evaporative	*31*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*1*	*3*	*6*	*0*	*0*	*0*	*0*
- Commercial & Industrial Equipment	*69*	*885*	*440*	*1*	*29*	*26*	*0*
- Non-Evaporative	*26*	*635*	*28*	*0*	*2*	*2*	*0*
- Evaporative	*2*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*40*	*166*	*386*	*0*	*27*	*25*	*0*
- Natural Gas	*1*	*83*	*26*	*0*	*0*	*0*	*0*
- Farm Equipment (sub-category total)	17	121	123	1	8	8	-
- Non-Evaporative	*2*	*66*	*2*	*0*	*0*	*0*	*0*
- Evaporative	*0*	*0*	*0*	*0*	*0*	*0*	*0*
- Diesel	*14*	*55*	*120*	*1*	*8*	*7*	*0*
- Fuel Storage and Handling	30	-	-	-	-	-	-
Total Statewide - All Sources**	***2430***	***13766***	***3219***	***302***	***2213***	***860***	***670***

* Includes directly emitted particulate matter only.
** A refined methodology was developed for NH_3 emission estimates, which are reflected in the increased estimates as compared with last year's almanac.
*** An improved statewide methodology has been developed for estimating emissions from ship and commercial boat activities. This results in increased emissions for all pollutants for these categories.
**** Natural sources are provided in Appendix E. These summaries do not include emissions from wind blown dust - exposed lake beds from Owens and Mono Lakes. These emissions are estimated to be about 131 tons/day of PM_{10}.

Table 2-2 (continued)

Ozone

2005 Statewide Emission Inventory - Ozone Precursors by Category

NO_x Sources - Statewide

NO_x is a group of gaseous compounds of nitrogen and oxygen, many of which contribute to the formation of ozone, PM_{10}, and $PM_{2.5}$. Most NO_x emissions are produced by the combustion of fuels. Industrial sources report NO_x emissions to local air districts and to the ARB. Other sources of NO_x emissions are estimated by the local air districts and the ARB. Mobile sources (including on-road and other) make up about 83 percent of the total statewide NO_x emissions. Area-wide sources, which include residential fuel combustion, managed burning and disposal, commercial cooking, and fires, contribute only a small portion of the total NO_x emissions.

NO_X Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	420	13%
Area-wide Sources	112	3%
On-Road Mobile	1518	47%
Gasoline Vehicles	792	25%
Diesel Vehicles	726	23%
Other Mobile	1169	36%
Gasoline Vehicles	296	9%
Diesel Vehicles	754	23%
Other	120	4%
Total Statewide	***3219***	***100%***

Table 2-3

ROG Sources - Statewide

Reactive organic gases (ROG) are volatile organic compounds that are photochemically reactive and contribute to the formation of ozone, as well as PM_{10} and $PM_{2.5}$. These emissions result primarily from incomplete fuel combustion and the evaporation of chemical solvents and fuels. On-road mobile sources are the largest contributors to statewide ROG emissions. Stationary sources of ROG emissions include processes that use solvents (such as dry cleaning, degreasing, and coating operations) and petroleum-related processes (such as petroleum refining and marketing and oil and gas extraction). Area-wide ROG sources include consumer products, pesticides, aerosol and architectural coatings, asphalt paving and roofing, and other evaporative emissions.

ROG Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	473	19%
Area-wide Sources	751	31%
On-Road Mobile	770	32%
Gasoline Vehicles	742	31%
Diesel Vehicles	28	1%
Other Mobile	436	18%
Gasoline Vehicles	324	13%
Diesel Vehicles	71	3%
Other	42	2%
Total Statewide	***2430***	***100%***

Table 2-4

Largest Stationary Sources Statewide

Largest Stationary Sources of NO_x Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Cemex - Black Mountain Quarry	Apple Valley	4754
Mojave Desert	TXI Riverside Cement Company	Oro Grande	4235
Mojave Desert	California Portland Cement	Mojave	2942
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	2770
San Francisco Bay Area	Valero Refining Company	Benicia	2064
Mojave Desert	Searles Valley Minerals	Trona	2021
San Francisco Bay Area	Shell Martinez Refinery	Martinez	1733
San Francisco Bay Area	Tesoro Refining And Marketing	Martinez	1493
Mojave Desert	National Cement	Lebec	1283
Mojave Desert	PG&E Topock Compressor Station	Needles	1140

Table 2-5

Largest Stationary Sources of ROG Statewide

Air Basin	Facility Name	City	Tons/Year
San Francisco Bay Area	Chevron Products Company	Richmond	1482
San Francisco Bay Area	Tesoro Refining And Marketing	Martinez	1422
San Francisco Bay Area	Shell Martinez Refinery	Martinez	1158
South Coast	ChevronTexaco Products	El Segundo	1011
South Coast	ExxonMobil Oil Corporation	Torrance	677
San Francisco Bay Area	New United Motor Manufacturing	Fremont	526
South Coast	BP West Coast Products Carson Refinery	Carson	526
San Joaquin Valley	Crimson Resource Management (Natural Gas)	Taft	445
San Francisco Bay Area	Valero Refining Company	Benicia	384
San Francisco Bay Area	ConocoPhillips - San Francisco	Rodeo	325

Table 2-6

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent almanacs.
The list of facilities does not include military bases, landfills, or airports.

Statewide Emissions Maps - Ozone Precursors

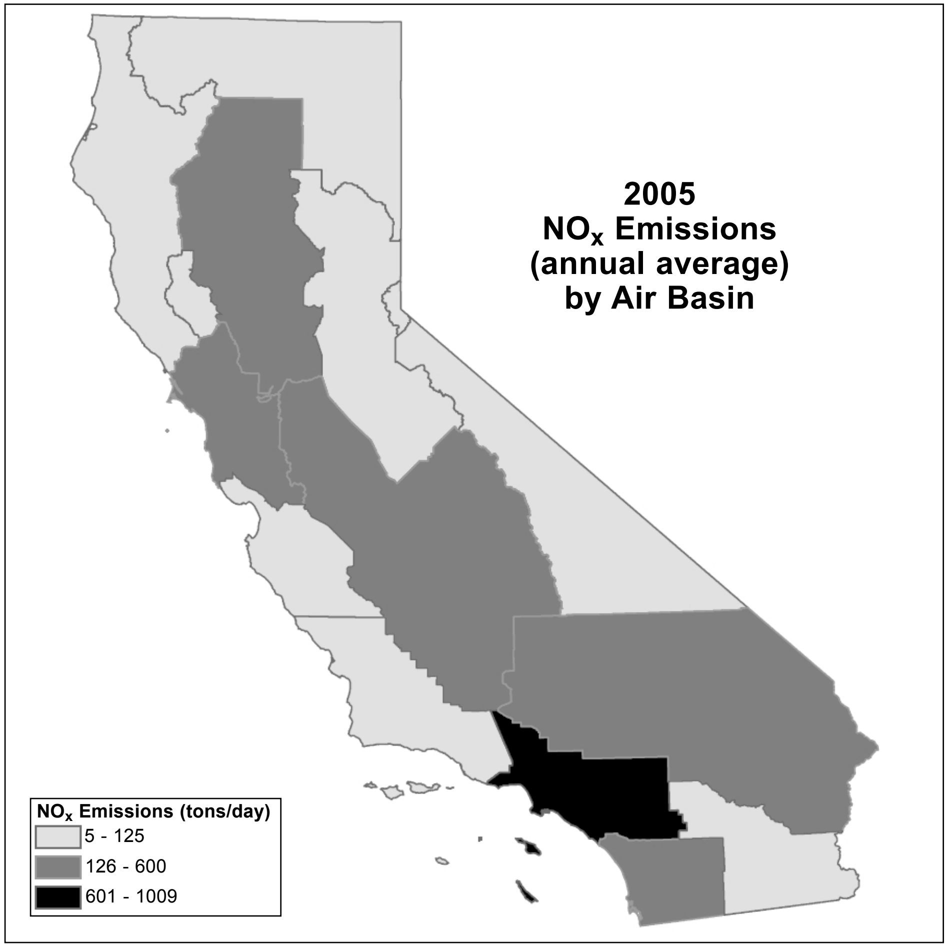


Figure 2-3

Figure 2-4

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Ozone - 2004 Air Quality

Air quality as it relates to ozone has improved greatly in California over the last several decades, although not uniformly throughout the State. However, despite aggressive emission controls, maximum measured ozone concentrations still exceed the State 1-hour standard in 10 of the 15 air basins. Maximum measured values exceed the national 8-hour standard in eight air basins. California's highest ozone concentrations occur in the South Coast Air Basin, where the peak 1 and 8-hour indicators are close to two times the level of the State 1-hour and national 8-hour standards.

Ozone concentrations are generally lower near the coast than they are inland, and rural areas tend to be cleaner than urban areas. This can be explained in part by the characteristics of ozone, including pollutant reactivity, transport, and deposition. Based on current ozone concentrations, substantial additional emission control measures will be needed to attain the standards throughout the State. 2004 air quality data for California's five largest air basins can be found in Chapter 4, along with information on 8-hour ozone concentrations, and preliminary 2005 ozone data.

Figure 2-5

Ozone - 2004 Air Quality Tables

Maximum Peak 1-Hour and 8-Hour Indicator and Exceedance Days by Air Basin

AIR BASIN	2004 Maximum Peak Indicator in parts per million		Number of Days in 2004 above the Standard		
			State	National	
	1-Hour	8-Hour	1-Hour	1-Hour	8-Hour
Great Basin Valleys Air Basin	0.09	0.09	0	0	0
Lake County Air Basin	0.08	0.07	0	0	0
Lake Tahoe Air Basin	0.09	0.08	1	0	0
Mojave Desert Air Basin	0.14	0.12	75	4	49
Mountain Counties Air Basin	0.14	0.12	33	2	32
North Central Coast Air Basin	0.10	0.09	0	0	0
North Coast Air Basin	0.08	0.07	0	0	0
Northeast Plateau Air Basin	0.08	0.07	0	0	0
Sacramento Valley Air Basin	0.13	0.12	29	1	20
Salton Sea Air Basin	0.13	0.12	48	1	37
San Diego Air Basin	0.11	0.10	12	1	8
San Francisco Bay Area Air Basin	0.13	0.10	7	0	0
San Joaquin Valley Air Basin	0.15	0.13	106	9	109
South Central Coast Air Basin	0.12	0.10	23	0	18
South Coast Air Basin	0.18	0.15	105	28	88

Table 2-7

Top Sites with Peak 1-Hour Indicator Values above the State 1-Hour Ozone Standard

Mojave Desert Air Basin
- Joshua Tree-National Monument
- Phelan-Beekley Rd. & Phelan Rd.
- Lancaster-43301 Division Street
- Hesperia-Olive Street
- Victorville-14306 Park Avenue

Mountain Counties Air Basin
- Cool-Highway 193
- Placerville-Gold Nugget Way
- Colfax-City Hall
- Grass Valley-Litton Building
- San Andreas-Gold Strike Road

North Central Coast Air Basin
- Pinnacles National Monument
- Hollister-Fairview Road

Sacramento Valley Air Basin
- Folsom-Natoma Street
- Sacramento-Del Paso Manor
- Sloughhouse
- Auburn-Dewitt C Avenue
- Roseville-N Sunrise Blvd.
- Sutter Buttes - S Butte

Salton Sea Air Basin
- Palm Springs-Fire Station
- El Centro-9th Street
- Calexico-Grant Street
- Indio-Jackson Street
- Calexico-East

San Diego Air Basin
- Alpine-Victoria Drive
- San Diego-Overland Avenue
- Camp Pendleton
- Escondido-East Valley Parkway
- El Cajon-Redwood Avenue
- Otay Mesa-Paseo International

San Francisco Bay Area Air Basin
- Livermore-793 Rincon Avenue
- San Martin-Murphy Avenue
- Los Gatos
- Gilroy-9th Street
- Concord-2975 Treat Blvd.

San Joaquin Valley Air Basin
- Parlier
- Fresno-1st Street
- Arvin-Bear Mountain Blvd.
- Clovis-North Villa Avenue
- Fresno-Sierra Skypark #2

South Central Coast Air Basin
- Simi Valley-Cochran Street
- Ojai-Ojai Avenue
- Piru-3301 Pacific Avenue
- Thousand Oaks-Moorpark Road
- Paradise Rd.-Los Padres Nat'l Forest

South Coast Air Basin
- Santa Clarita
- Fontana-Arrow Highway
- Redlands-Dearborn
- Crestline
- Glendora-Laurel

Sites with 1-hour peak indicator values above the level of the State ozone standard during 2004. The top five sites in each air basin are listed in descending order of their peak indicator value. If an air basin is not listed, the peak indicator values at sites in that air basin were not above the State 1-hour ozone standard.

Table 2-8

The Nature of Particulate Matter (PM_{10} and $PM_{2.5}$)

PM_{10} is a mixture of particles and droplets that vary in size and chemical composition, depending on each particle's origin. PM_{10} includes the subsets of "coarse" particles, those between 2.5 microns and 10 microns in diameter ($PM_{2.5-10}$), and "fine" particles, those 2.5 microns or smaller ($PM_{2.5}$). Particulate matter can be directly emitted into the air in the form of dust and soot (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia (secondary PM). Primary particles are mostly coarse in size, but include some fine particles, while secondary particles are mostly fine.

Sources of ambient PM include: combustion sources such as trucks and passenger cars, off-road equipment, industrial processes, residential wood burning, and forest/agricultural burning; fugitive dust from paved and unpaved roads, construction, mining, and agricultural activities; and ammonia sources such as livestock operations, fertilizer application, and motor vehicles. In general, combustion processes emit and form fine particles, whereas particles from dust sources tend to fall in the coarse range.

The levels and chemical make-up of ambient PM vary widely from one area to another. In some areas, PM levels vary strongly by season. This is due to seasonal activity increase for some emissions sources and to weather conditions that are conducive to the build-up of PM. Seasonal sources of PM include wildfires, agricultural processes, dust storms, and residential wood burning. Stagnant conditions and cool temperatures during the winter contribute to the formation of secondary ammonium nitrate and ammonium sulfate, leading to higher ambient $PM_{2.5}$ concentrations. Dry weather and windy conditions cause higher coarse PM emissions, resulting in elevated PM_{10} concentrations.

The remainder of the discussion on PM includes summarized emission inventory data for directly emitted PM_{10} and $PM_{2.5}$, summarized information on ambient PM_{10} and $PM_{2.5}$ concentrations, and description of the link between source emissions and ambient PM concentrations in selected regions of the State.

Consistent with last year's almanac, is the reporting of both State and national annual averages for PM_{10} and $PM_{2.5}$. State and national annual averages may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved for assessing compliance with each standard, and 3) the State standard uses local conditions while the national standard uses standard conditions for data reporting.

Directly Emitted Particulate Matter (PM_{10})
2005 Statewide Emission Inventory - Directly Emitted PM_{10} by Category

Area-wide sources account for about 88 percent of the statewide emissions of directly emitted PM_{10}. The major area-wide source of PM_{10} is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of PM_{10} emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute a relatively small portion of directly emitted PM_{10} emissions but are a major source of the ROG and NO_x that form secondary particles. The section titled *PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured PM_{10} levels

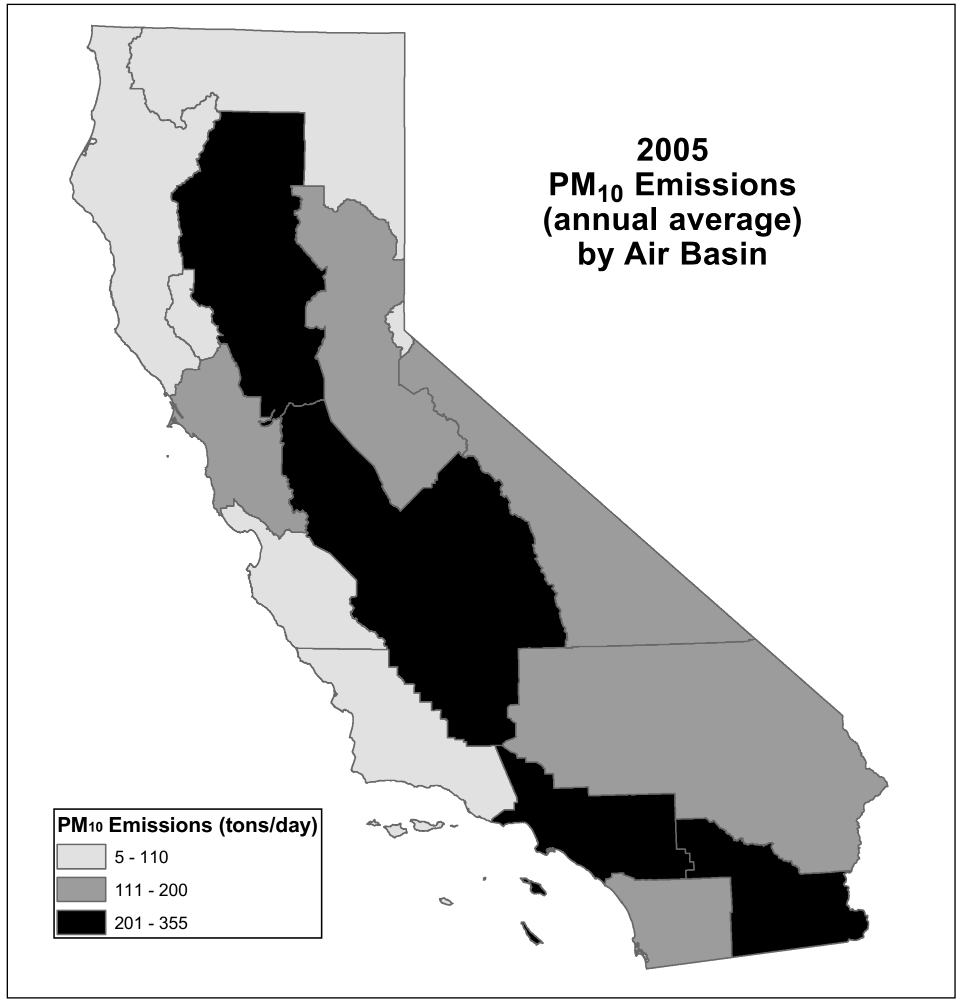

Figure 2-6

PM_{10} Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	136	6%
Area-wide Sources	1939	88%
On-Road Mobile	50	2%
Gasoline Vehicles	33	1%
Diesel Vehicles	17	1%
Other Mobile	88	4%
Gasoline Vehicles	34	2%
Diesel Vehicles	44	2%
Other	10	0%
Total Statewide	***2213***	***100%***

Table 2-9

Largest Stationary Sources Statewide

Largest Stationary Sources of Directly Emitted PM_{10} Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	1468
Mojave Desert	Cemex - Black Mountain Quarry	Apple Valley	955
Mojave Desert	TXI Riverside Cement Company	Oro Grande	753
Mountain Counties	Sierrapine Ltd Ampine Division	Martell	518
South Coast	ChevronTexaco Products	El Segundo	350
Mojave Desert	Antelope Valley Aggregate	Littlerock	345
Mojave Desert	California Portland Cement	Mojave	329
Mojave Desert	Searles Valley Minerals	Trona	320
San Francisco Bay Area	Shell Martinez Refinery	Martinez	308
Mojave Desert	National Cement	Lebec	295

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac.
The list of facilities does not include military bases, landfills, or airports.

Table 2-10

Directly Emitted Particulate Matter ($PM_{2.5}$)

2005 Statewide Emission Inventory - Directly Emitted $PM_{2.5}$ by Category

Area-wide sources account for about 76 percent of the statewide emissions of directly emitted $PM_{2.5}$. The major area-wide source of $PM_{2.5}$ is fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Fugitive dust emissions from unpaved and paved roads are related to motor vehicle population levels due to vehicular travel on both types of roads. Other sources of $PM_{2.5}$ emissions include brake and tire wear, residential wood burning, and industrial sources. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ emissions, but are a major source of the ROG and NO_x that form secondary particles. The section titled *PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality* describes how emissions from specific sources are linked to measured $PM_{2.5}$ levels

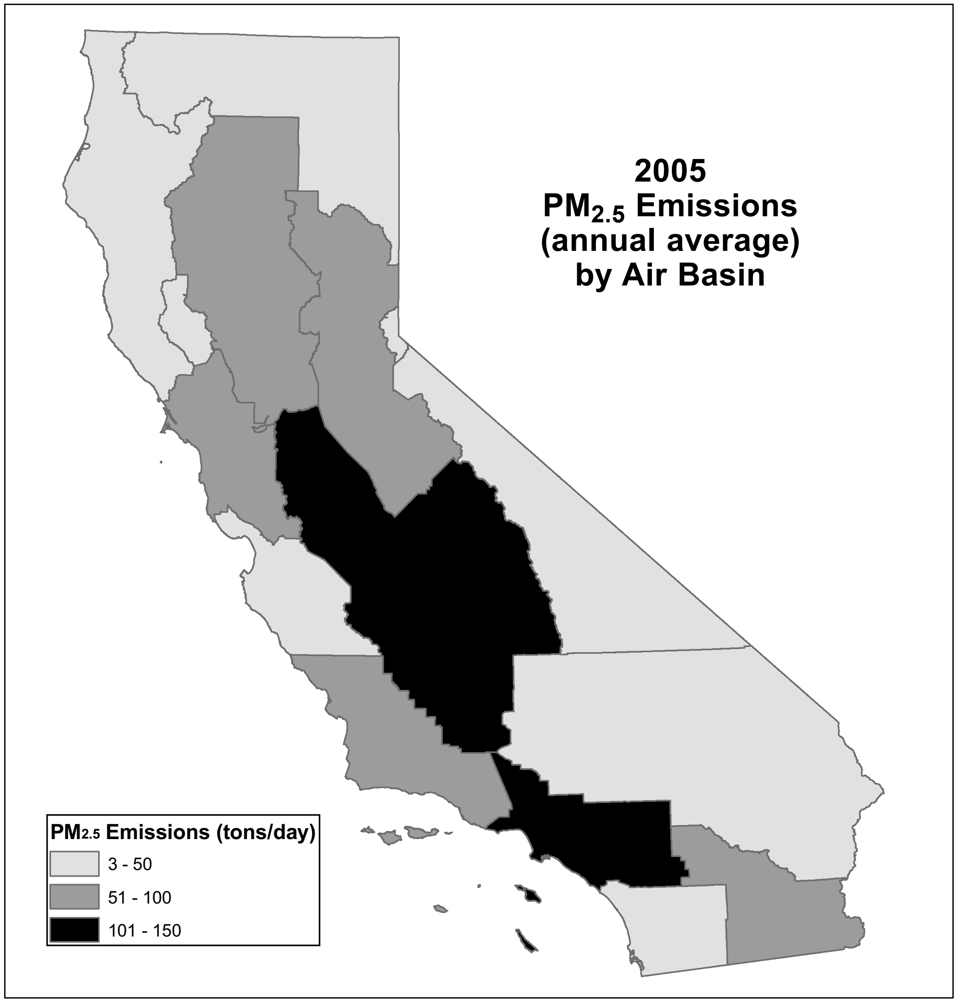

Figure 2-7

$PM_{2.5}$ Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	91	11%
Area-wide Sources	654	76%
On-Road Mobile	34	4%
Gasoline Vehicles	19	2%
Diesel Vehicles	15	2%
Other Mobile	80	9%
Gasoline Vehicles	30	3%
Diesel Vehicles	40	5%
Other	10	1%
Total Statewide	***860***	***100%***

Table 2-11

Largest Stationary Sources Statewide

Largest Stationary Sources of Directly Emitted $PM_{2.5}$ Statewide

Air Basin	Facility Name	City	Tons/Year
Mojave Desert	Mitsubishi Cement 2000	Lucerne Valley	928
Mountain Counties	Sierrapine Ltd Ampine Division	Martell	414
Mojave Desert	Cemex - Black Mountain Quarry	Apple Valley	413
Mojave Desert	TXI Riverside Cement Company	Oro Grande	343
South Coast	ChevronTexaco Products	El Segundo	298
San Francisco Bay Area	Shell Martinez Refinery	Martinez	297
Mojave Desert	Searles Valley Minerals	Trona	226
Sacramento Valley	Johns-Manville (Insulation)	Willows	220
San Francisco Bay Area	Chevron Products Company	Richmond	206
Mojave Desert	National Cement	Lebec	198

Facility totals are the most recent available data. Some facilities may have reduced or increased emissions since these data were collected. These changes will be reflected in subsequent editions of the almanac.
The list of facilities does not include military bases, landfills, or airports.

Table 2-12

PM_{10} - 2004 Air Quality

Most areas of California have either 24-hour or annual PM_{10} concentrations that exceed the State standards. Some areas exceed both State standards. Several areas, both urban and rural, also exceed the national standards. The highest annual average values during 2004 occurred in the Great Basin Valleys, Salton Sea, South Coast, San Joaquin Valley, Sacramento Valley, and San Diego Air Basins. The 2004 data are summarized in Table 2-13. The highest 24-hour concentrations generally occurred in the desert areas where wind-blown dust contributes to local PM_{10} problems. However, the 2004 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Current area designations can be found on the ARB website at *www.arb.ca.gov/desig/adm/adm.htm*.

Particles resulting from combustion contribute to high PM_{10} in a number of urban areas. While many of the control programs implemented for ozone will also reduce PM_{10}, more controls specifically for PM_{10} will be needed to reach attainment.

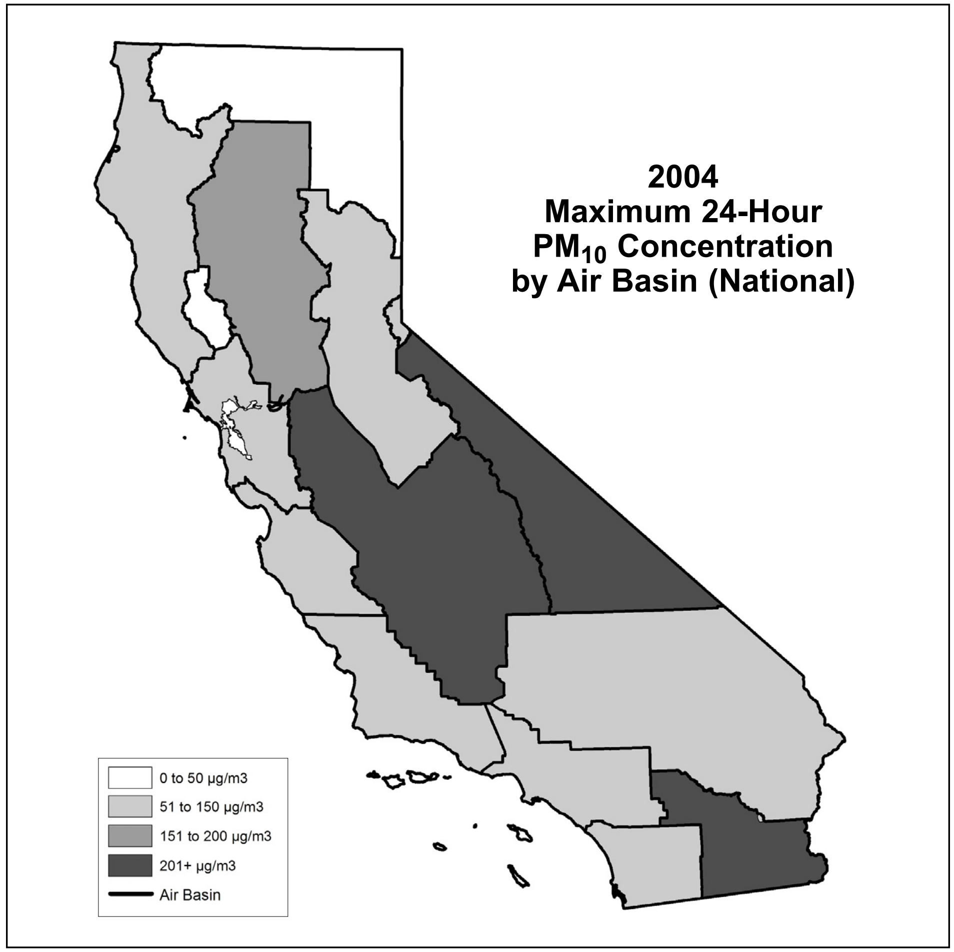

Figure 2-8

PM_{10} - 2004 Air Quality Tables

Maximum 24-Hour and Annual PM_{10} Concentrations by Air Basin

AIR BASIN	2004 Maximum 24-Hour Concentration in micrograms/cubic meter		2004 Maximum Annual Average of Quarters in micrograms/cubic meter	
	State	National	State	National
Great Basin Valleys Air Basin	4797	4913	68.3	25.4
Lake County Air Basin	22		10.0	
Lake Tahoe Air Basin	112	130	37.5	44.2
Mojave Desert Air Basin	83	88	18.3	33.1
Mountain Counties Air Basin	124	133	26.3	28.0
North Central Coast Air Basin	83	80	28.2	27.3
North Coast Air Basin	64	61	20.6	20.7
Northeast Plateau Air Basin	29	32	12.8	13.6
Sacramento Valley Air Basin	171	169	43.2	42.6
Salton Sea Air Basin	364	354	60.3	60.8
San Diego Air Basin	138	137	51.7	51.2
San Francisco Bay Area Air Basin	65	63	26.0	25.3
San Joaquin Valley Air Basin	219	217	43.6	44.6
South Central Coast Air Basin	69	146	28.8	31.4
South Coast Air Basin	133	137	53.5	54.8

* The table lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site or different monitor. In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic. For example, in the Great Basin Valleys and the Mojave Desert Air Basins, due to differing State and national data completeness criteria, the State and national maximum annual averages reflect values from two different sites.

24-hour data - The table may include data from extreme, exceptional, or unusual concentration events: however, there is a mechanism in place to review for these types of events during the area designation process.

Annual average data - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.

Table 2-13

Top Sites with 24-Hour Concentrations above the State PM_{10} Standard

Great Basin Valleys Air Basin
- Dirty Sox
- Shell Cut-Highway 190
- Mono Lake North Shore
- Flat Rock-Highway 190
- Olancha-Walker Creek Road

Lake Tahoe Air Basin
- South Lake Tahoe-Sandy Way

Mojave Desert Air Basin
- Trona-Athol and Telegraph
- Ridgecrest-100 W. California Ave.
- Victorville-14306 Park Avenue
- China Lake-Powerline Road

Mountain Counties Air Basin
- Yosemite Village-Visitor Center
- Quincy-N Church Street

North Central Coast Air Basin
- Davenport
- Santa Cruz-2544 Soquel Avenue
- Moss Landing-Sandholt Road

North Coast Air Basin
- Eureka-Health Dept. 6th and I Street

Sacramento Valley Air Basin
- Woodland-Gibson Road
- Willows-E Laurel Street
- Colusa-Sunrise Blvd.
- Chico-Manzanita Avenue
- Yuba City-Almond Street

Salton Sea Air Basin
- Brawley-220 Main Street
- El Centro-9th Street
- Westmorland-West 1st Street
- Calexico-Grant Street
- Indio-Jackson Street

San Diego Air Basin
- Otay Mesa-Paseo International
- San Diego-12th Avenue
- Escondido-East Valley Parkway
- El Cajon-Redwood Avenue

San Francisco Bay Area Air Basin
- San Jose-Tully Road
- Redwood City
- Pittsburg-10th Street
- San Jose-Jackson Street
- San Francisco-Hunters Point

San Joaquin Valley Air Basin
- Corcoran-Patterson Avenue
- Hanford-South Irwin Street
- Bakersfield-5558 California Avenue
- Bakersfield-Golden State Highway
- Visalia-North Church Street

South Central Coast Air Basin
- Thousand Oaks-Moorpark Road
- Nipomo-Regional Park
- El Rio-Rio Mesa School #2
- Lompoc-South H Street
- Santa Maria-906 South Broadway

South Coast Air Basin
- Riverside-Rubidoux
- San Bernardino-4th Street
- Fontana-Arrow Highway
- Ontario-1408 Francis Street
- Redlands-Dearborn

Sites with 24-hour PM_{10} concentrations above the level of the State PM_{10} standard during 2004. The top five sites in each air basin are listed in descending order of their maximum 24-hour concentration. If an air basin is not listed, the 24-hour PM_{10} concentrations at sites in that air basin were not above the State 24-hour PM_{10} standard. If more than 5 sites are listed, there were multiple sites with the same maximum concentration.

Table 2-14

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$PM_{2.5}$ - 2004 Air Quality

As explained in the Introduction section of Chapter 1, the U.S. EPA promulgated new national standards (24-hour and annual average) for $PM_{2.5}$ in July 1997. In June 2002, the ARB established a new, more health-protective State annual average $PM_{2.5}$ standard. The installation of federally approved $PM_{2.5}$ mass monitors throughout California began in 1998 and is now complete, with monitors at 81 sites. Detailed information on California's $PM_{2.5}$ network can be found on the ARB website at *www.arb.ca.gov/aqd/pm25/pmfnet02.htm*.

The majority of sites in California's $PM_{2.5}$ network began sampling in early 1999. The 2004 data are summarized in Table 2-15. Sites in the South Coast Air Basin recorded the highest national 24-hour concentrations and 98th percentile 24-hour concentrations. However, the 2004 maximum 24-hour concentrations are not equivalent to the values used for area designations, which consider frequency of occurrence and potential impact from exceptional or unusual events. Current area designations can be found on the ARB website at *www.arb.ca.gov/desig/adm/adm.htm*. Sites in the South Coast and San Joaquin Valley Air Basins recorded the highest annual average concentrations in the State. The annual averages for these areas were about twice the level of the State annual $PM_{2.5}$ standard.

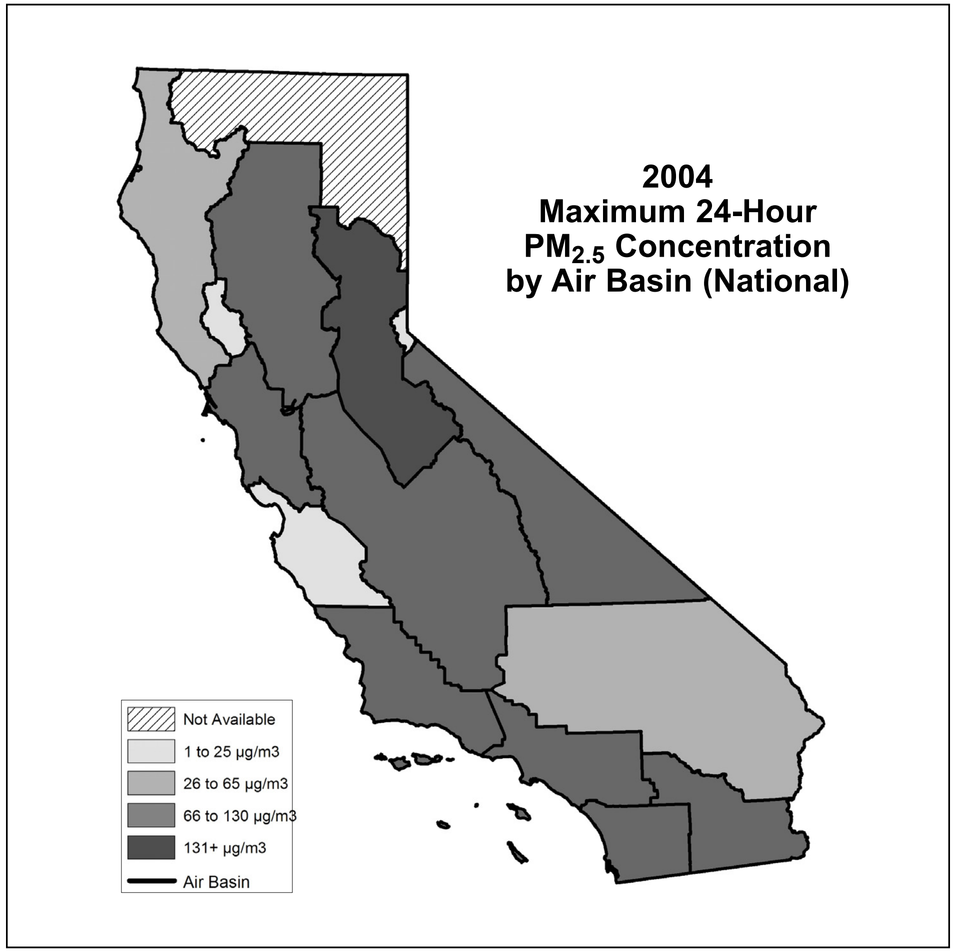

Figure 2-9

$PM_{2.5}$ - 2004 Air Quality Tables

Maximum 24-Hour, 98th Percentile, and Annual $PM_{2.5}$ Concentrations by Air Basin

AIR BASIN	2004 Maximum 24-Hr Concentration in micrograms/cubic meter		98th Percentile 24-Hr Conc. (ug/m^3)*	2004 Max Avg of Quarterly Means in micrograms/cubic meter*	
	State	National		State	National
Great Basin Valleys Air Basin	81.0	81.0	Incomplete Data	Incomplete Data	Incomplete Data
Lake County Air Basin	18.1	18.1	9.0	4.4	4.4
Lake Tahoe Air Basin	23.2	20.0	Incomplete Data	Incomplete Data	Incomplete Data
Mojave Desert Air Basin	34.0	34.0	20.0	10.8	10.8
Mountain Counties Air Basin	148.4	44.0	33.0	11.7	11.7
North Central Coast Air Basin	22.6	22.6	15.5	6.8	7.0
North Coast Air Basin	25.6	25.6	23.1	7.0	8.2
Northeast Plateau Air Basin	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data
Sacramento Valley Air Basin	76.3	65.0	54.0	16.5	15.1
Salton Sea Air Basin	76.0	74.2	31.9	16.1	11.8
San Diego Air Basin	67.3	67.3	37.4	14.1	14.1
San Francisco Bay Area Air Basin	73.7	73.7	39.8	11.6	11.6
San Joaquin Valley Air Basin	77.0	71.0	54.0	18.2	18.9
South Central Coast Air Basin	91.9	41.2	36.7	12.5	12.6
South Coast Air Basin	93.8	93.8	72.4	16.6	22.1

The table lists the highest value for each statistic. Within an air basin, the highest value for each statistic may reflect a different site. In addition, the State and national requirements for data completeness are different. This may result in marked differences between the State and national values for the same statistic (e.g., maximum annual averages for the Salton Sea and South Coast air basins).

* These statistics and determination of their validity are calculated according to the methods specified in 40 CFR Part 50, Appendix N. Validity is based on the number of measurements available per quarter and therefore, depends on data completeness. Both the 98th percentile concentration and the average of quarters concentration relate to the national $PM_{2.5}$ standards, while only the average of quarters concentration relates to the State $PM_{2.5}$ standard.

24-hour data - The table may include data from extreme, exceptional, or unusual concentration events: however, there is a mechanism in place to review for these types of events during the area designation process.

Annual average data - Extreme, exceptional, or unusual concentration events do not generally significantly influence the annual average. However, their exclusion can be considered on a case-by-case basis.

Table 2-15

PM_{10} and $PM_{2.5}$ - Linking Emissions Sources with Air Quality

The size, concentration, and chemical composition of PM vary by region and by season. A number of areas exhibit strong seasonal patterns. Other areas have a much more uniform distribution with PM concentrations remaining high throughout the year. In yet other areas, isolated PM exceedances can occur at any time of the year.

In the San Joaquin Valley, the San Francisco Bay Area, and the Sacramento region, there is a strong seasonal variation in PM, with higher PM_{10} and $PM_{2.5}$ concentrations in the fall and winter months (refer to Figure 2-10). In the winter, PM_{10} and $PM_{2.5}$ concentrations remain elevated for extended periods. These higher concentrations are caused by increased activity for some emission sources and meteorological conditions that are conducive to the build-up of PM. During the winter, the $PM_{2.5}$ size fraction drives the PM concentrations, and the major contributor to high levels of ambient $PM_{2.5}$ is the secondary formation of PM caused by the reaction of NO_x and ammonium to form ammonium nitrate. The San Joaquin Valley also records high PM_{10} levels during the fall. During this season, both the coarse fraction and the $PM_{2.5}$ fraction drove the PM concentrations.

In the eastern South Coast region, PM_{10} and $PM_{2.5}$ concentrations remain high throughout the year (refer to Figure 2-11). The more uniform activity patterns of emission sources, as well as less variable weather patterns, leads to this more uniform concentration pattern. In other areas, high PM can be more episodic than seasonal. For example, in the Owens Lake area of the Great Basin Valleys Air Basin, episodic fugitive dust events lead to very high PM_{10} levels, with soil dust as the major contributor to ambient PM_{10}.

Analysis of PM chemical composition data collected from a variety of routine and special monitoring programs provides insight into the fraction of $PM_{2.5}$ that is secondary. Data were obtained from the California $PM_{2.5}$ and PM_{10} monitoring networks, California Regional PM_{10}/$PM_{2.5}$ Air Quality Study, Children's Health Study,

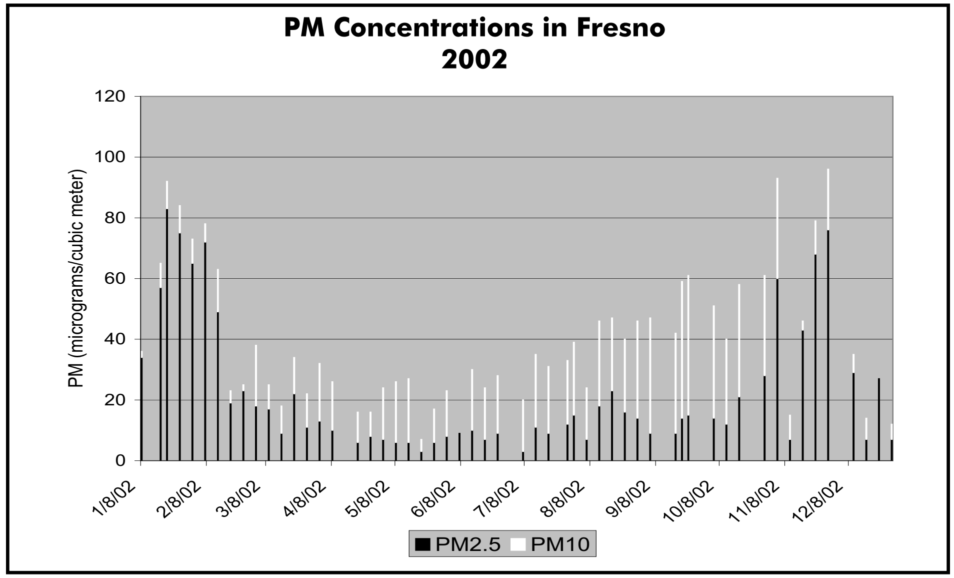

Figure 2-10

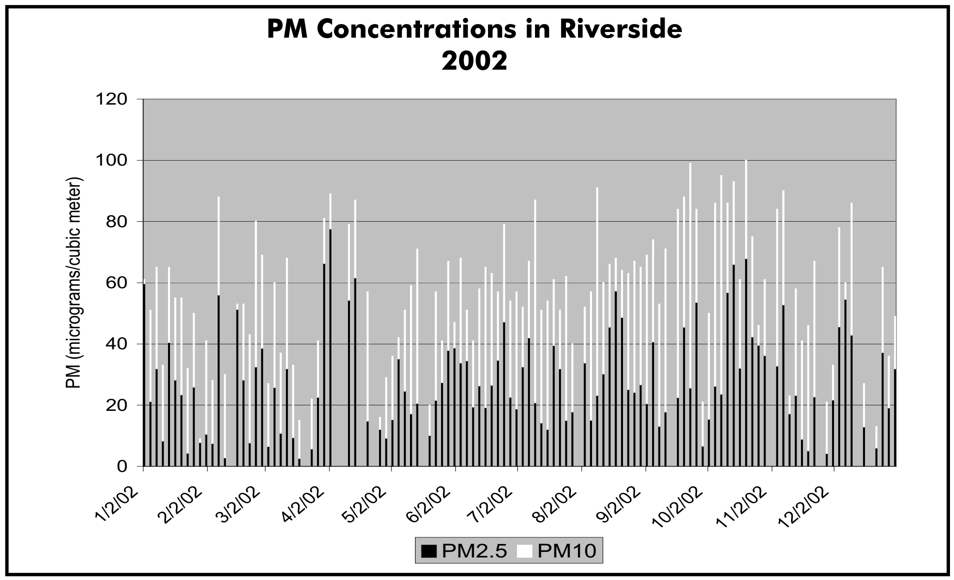

Figure 2-11

Integrated Monitoring and Protected Visual Environments Program, and South Coast Air Quality Management District's PM Technical Enhancement Programs of 1995 and 1998-1999. Secondary $PM_{2.5}$ estimates include ammonium nitrate and ammonium sulfate components, which form through reactions in the atmosphere of nitrogen oxides and sulfur oxides emitted by motor vehicles and other combustion processes. $PM_{2.5}$ also includes secondary organic aerosols (SOA) resulting from atmospheric reactions of organic compounds emitted from combustion sources and biogenic processes. Since only limited information is available on how much of the measured $PM_{2.5}$ organic carbon component is secondary, SOA are not included in the secondary $PM_{2.5}$ estimates. However, available studies suggest that in the South Coast, on an annual average basis, SOA may constitute 6 to 16 percent of $PM_{2.5}$ (Schauer et. al. 1996) and in urban areas of the San Joaquin Valley, during the winter, SOA may contribute up to an average of eight percent of $PM_{2.5}$ (Schauer and Cass, 1998).

Chemical Mass Balance (CMB) models are used to establish which sources and how much of their emissions contribute to ambient PM concentrations. CMB models use chemical composition data from ambient PM samples and from emission sources. These data are often collected during special source attribution studies. The source attribution data presented in this section were derived from a variety of studies with differing degrees of chemical speciation. In general, however, the source categories can be interpreted in the following manner. The road and other dust, wood smoke, cooking, vehicle exhaust, and construction categories represent sources which directly emit particles. Road and other dust represents the combination of mechanically disturbed soil (paved and unpaved roads, agricultural activities) and wind-blown dust. Wood smoke generally represents residential wood combustion, but may also include combustion from other biomass burning such as agricultural or prescribed burning. The vehicle exhaust category represents direct motor vehicle exhaust particles from both gasoline and diesel vehicles. Construction reflects construction and demolition activities. Ammonium nitrate and ammonium sulfate represent secondary species (i.e., they form in the atmosphere from the emissions of nitrogen oxides (NO_x), sulfur oxides (SO_x), and ammonia). Combustion sources such as motor vehicles and stationary sources contribute to the NO_x that forms ammonium nitrate. Mobile sources such as diesel vehicles, locomotives, and ships and stationary combustion sources emit the SO_x that forms ammonium sulfate. Ammonia sources include animal feedlots, fertilizers, and motor vehicles. The other carbon sources category reflects organic sources not included in the source attribution models, such as natural gas combustion, as well as secondary organic carbon formation. The unidentified category represents the mass that cannot be accounted for by the identified source categories. It can include particle-bound water, as well as other unidentified sources.

Estimated Secondary Portion of $PM_{2.5}$ (annual average)	
Air Basin	Secondary $PM_{2.5}$ (%)
Great Basin Valleys	30
Lake County	30
Lake Tahoe	40
Mojave Desert	40
Mountain Counties	30
North Central Coast	40
North Coast	30
Northeast Plateau	30
Sacramento Valley	30
Salton Sea	40
San Diego	50
San Francisco Bay Area	40
San Joaquin Valley	40
South Central Coast	50
South Coast	60

Table 2-16

The figures on the following pages present the best available source attribution data from CMB modeling for selected regions. These presentations are representative of typical days when the State PM_{10}

standards are exceeded (refer to Chapter 1, for a review of the State standards). The fractions of the constituents shown can vary daily and from year to year, depending on factors such as meteorology.

A detailed description of PM_{10} and $PM_{2.5}$ characteristics in each of California's 35 air districts by air basin is included in the ARB's technical report titled "Characterization of Ambient PM_{10} and $PM_{2.5}$ in California, which can be found on the ARB website at *www.arb.ca.gov/pm/pm.htm.*

San Joaquin Valley Air Basin

Figures 2-12 and 2-13 illustrate contributions to ambient PM in the San Joaquin Valley during the winter and on an annual average basis. These are the results from analysis of data collected during the California Regional $PM_{10}/PM_{2.5}$ Air Quality Study. (San Joaquin Valley Air Pollution Control District, 2003)

During the winter in Fresno, secondary ammonium nitrate was the largest contributor to PM_{10}, formed from NOx emissions from mobile and stationary combustion sources, combined with ammonia. Emissions from wood smoke, vehicle exhaust, and road and agricultural sources also contribute significantly to PM_{10} levels. On an annual average basis, elevated concentrations of PM_{10} were associated with high levels of road and agricultural dust. Secondary ammonium nitrate, wood smoke, and vehicle exhaust particles also contributed significantly to annual PM_{10} concentrations.

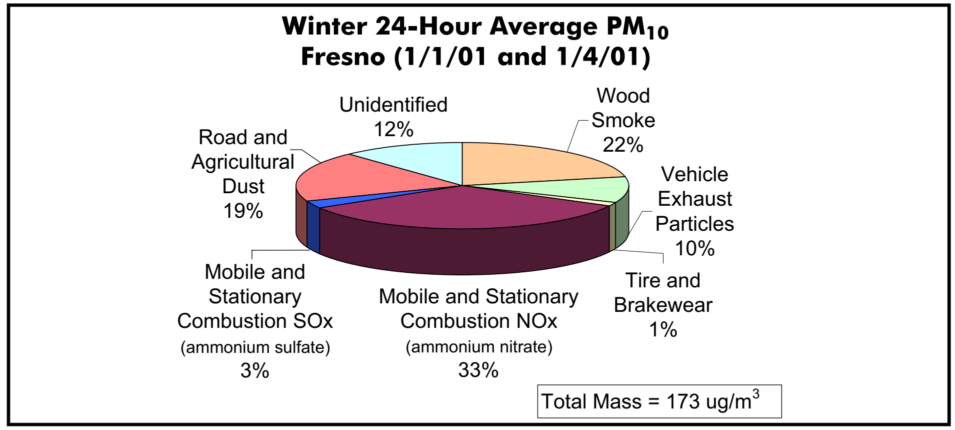

Figure 2-12

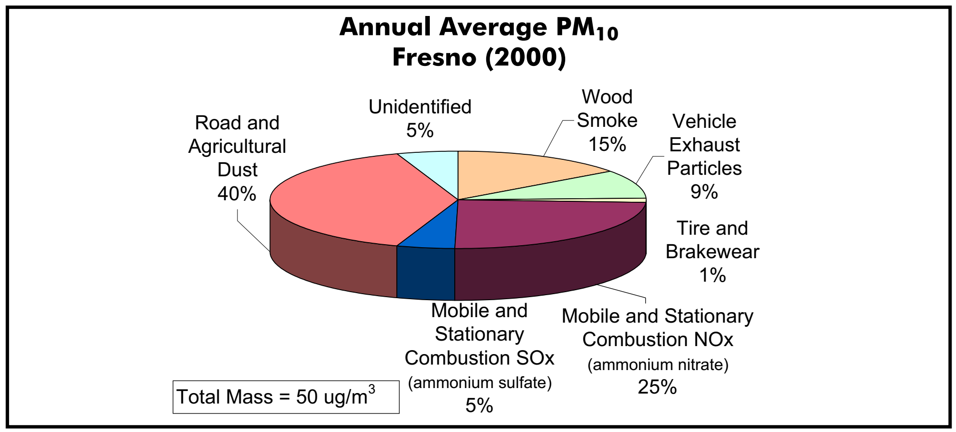

Figure 2-13

San Francisco Bay Area Air Basin

Figures 2-14 and 2-15 illustrate the sources of PM during the winter in the San Francisco Bay Area. The data are from the source apportionment analysis conducted by the Bay Area Air Quality Management District using samples collected during two special studies (Fairley, 1996, 2001).

During the winter, in San Jose, high PM concentrations are associated with high levels of wood smoke, primarily from residential wood combustion, and cooking. NO_x emitted from mobile and stationary combustion sources, in combination with ammonia, contributes about one-fourth of the PM levels in the form of ammonium nitrate. Particle emissions from mobile and stationary combustion sources are also a major contributor to $PM_{2.5}$. Road dust is a significant contributor to PM_{10}, but not $PM_{2.5}$.

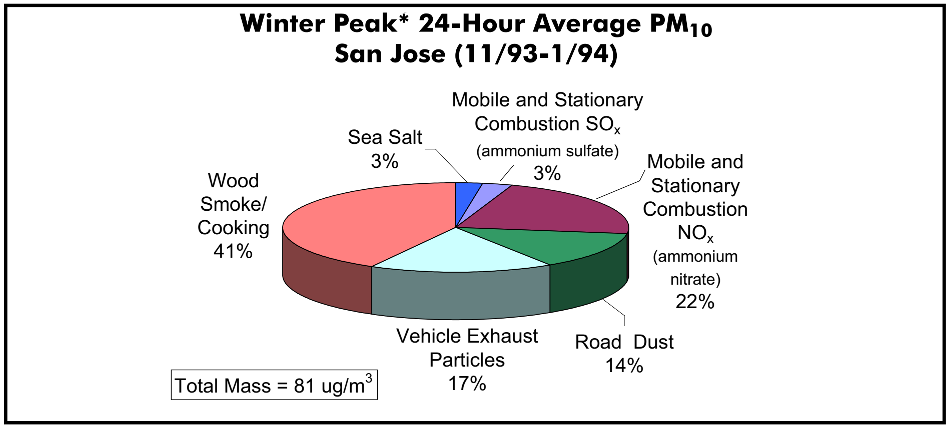

Figure 2-14

* Average of days with PM_{10} > 50 ug/m^3

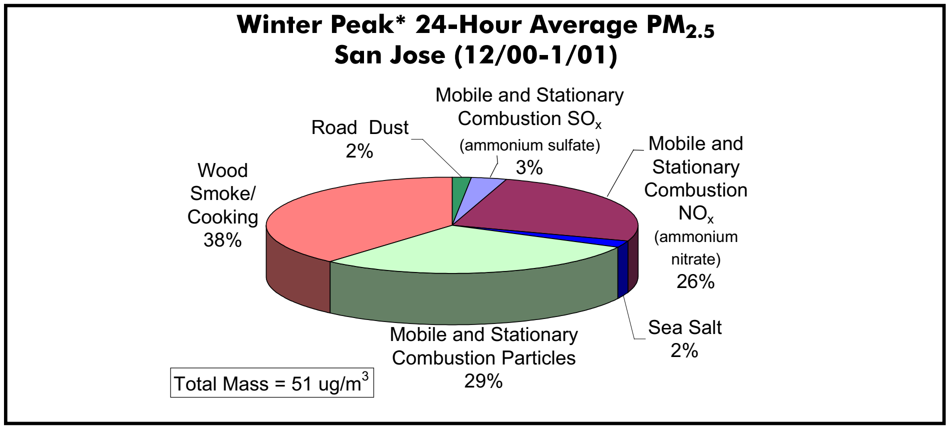

Figure 2-15

* Average of days with $PM_{2.5}$ > 40 ug/m^3

Sacramento Valley Air Basin

Figures 2-16 and 2-17 illustrate source contributions to ambient PM_{10} and $PM_{2.5}$ during the winter in Sacramento. The data are from the analysis of ambient air samples collected from November through January, during the six year period of 1991 through 1996 (Motallebi, 1999).

NO_x emissions from mobile and stationary combustion sources, combined with ammonia to form ammonium nitrate, are the largest contributor to ambient PM levels. Vehicle exhaust particle emissions and wood smoke from residential wood combustion also contribute significantly. While road and other dust is a significant component of ambient PM_{10}, its contribution to $PM_{2.5}$ is minor.

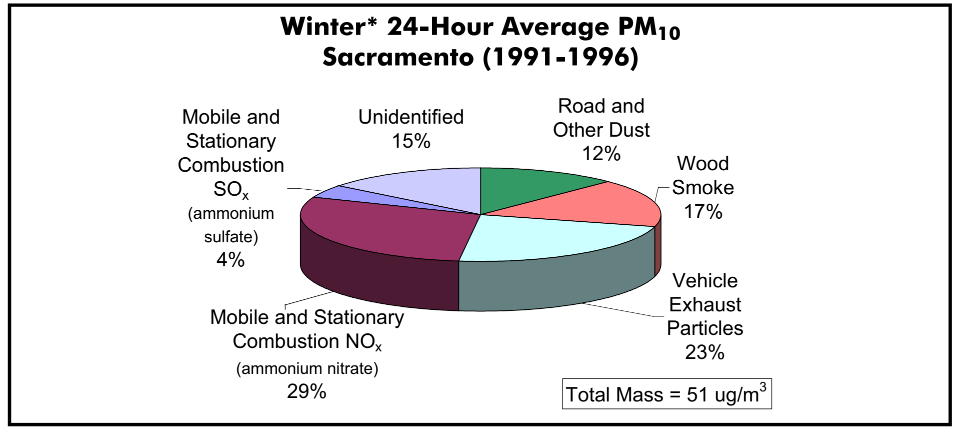

Figure 2-16

* Average of days with PM_{10} > 40 ug/m3

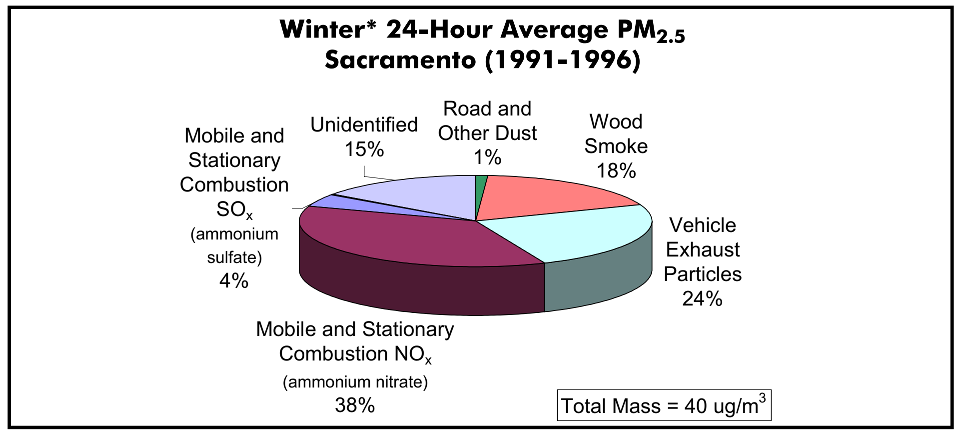

Figure 2-17

* Average of days with PM_{10} > 40 ug/m3

South Coast Air Basin

Data for Figures 2-18, 2-19, 2-20, and 2-21 are from the source apportionment analysis that the South Coast Air Quality Management District (SCAQMD) performed for the 1997 Air Quality Management Plan. SCAQMD collected samples during a one-year special study from January 1995 to February 1996, as part of the PM_{10} Technical Enhancement Program (SCAQMD, 1996).

On an annual basis, in Central Los Angeles, dust from roads and construction is the major contributor to ambient PM_{10}. This is not the case for the episode on November 17, 1995. In both cases, NO_x and SO_x emitted from mobile and stationary combustion sources, combined with ammonia, contribute significantly in the form of ammonium nitrate and sulfate. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM_{10} levels.

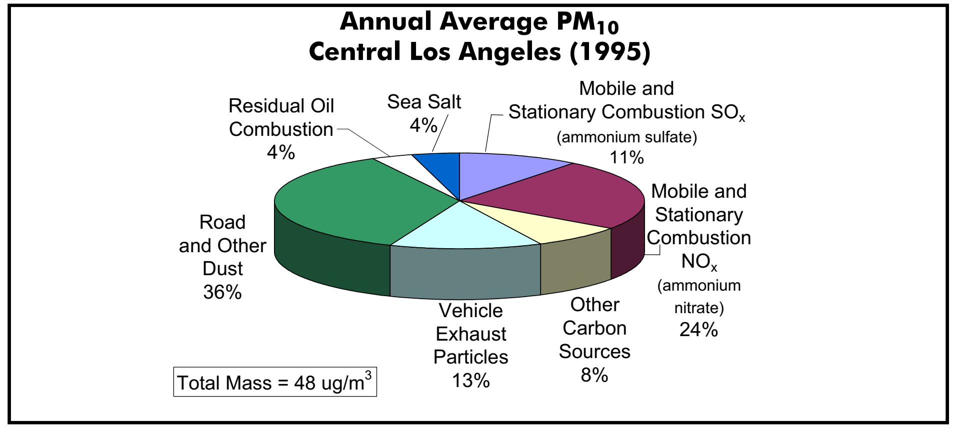

Figure 2-18

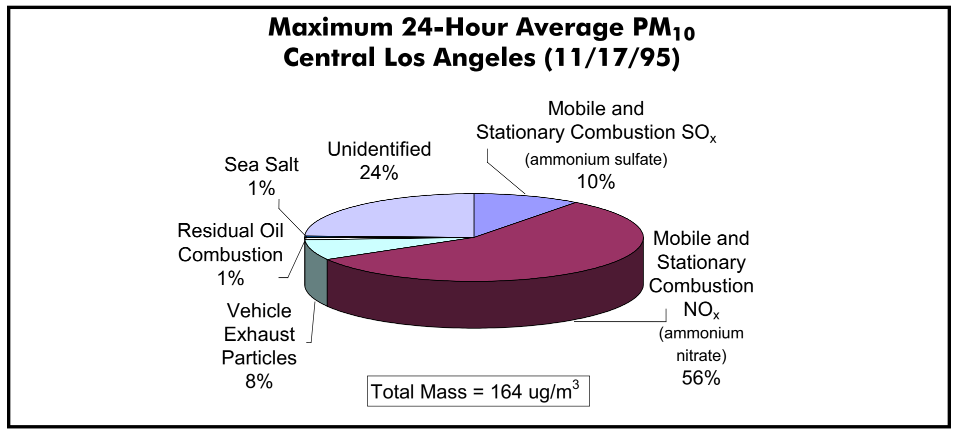

Figure 2-19

On an annual basis, in Rubidoux, dust from roads and construction is the major contributor to ambient PM_{10}. In contrast, dust was a minor contributor to the PM_{10} episode on November 17, 1995. In both cases, ammonium nitrate formed from NO_x emitted from mobile and stationary combustion sources, combined with ammonium, contributes significantly. Vehicle exhaust particles and emissions from other carbon sources also contribute to both annual and episodic ambient PM_{10} levels.

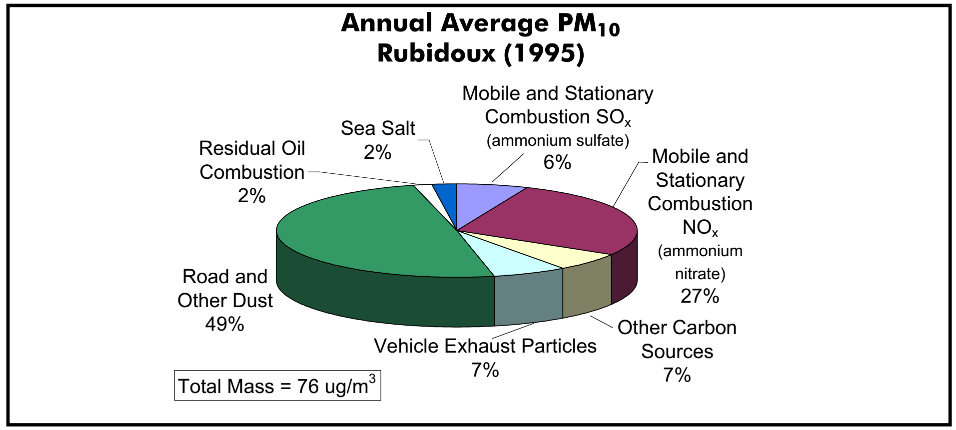

Figure 2-20

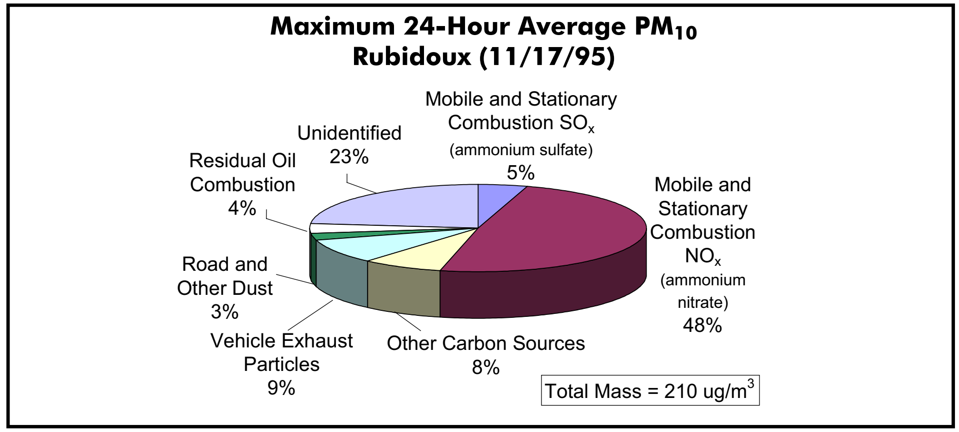

Figure 2-21

References for Particulate Matter:

Fairley, D. *Source Apportionment of Bay Area Particulates.* 1996; Personal communication.

Fairley, D. *$PM_{2.5}$ Source Apportionment for San Jose 4th Street.* 2001; Personal communication.

Motallebi, N. *Wintertime PM_{10} and $PM_{2.5}$ Source Apportionment at Sacramento, California.* Journal of the Air & Waste Management Association 1999; 49:PM-25-34.

South Coast Air Quality Management District. *"Modeling and Attainment Demonstrations"* in 1997 Air Quality Management Plan, Diamond Bar, California. 1996.

Schauer, J. J., Rogge, W. F., Hidemann, L. M., Mazurek, M. A., and Cass, G. R. *Source Apportionment of Airborne Particulate Matter Using Organic Compounds as Tracers.* Atmospheric Environment; 30: 22, 3837-3855, 1996.

San Joaquin Valley Air Pollution Control District. *2003 PM_{10} Plan: San Joaquin Valley Plan to Attain Federal Standards for Particulate Matter 10 Microns and Smaller.* Appendix N.

Carbon Monoxide

2005 Statewide Emission Inventory - Carbon Monoxide by Category

Carbon monoxide (CO) gas is formed as the result of incomplete combustion of fuels and waste materials such as gasoline, diesel fuel, wood, and agricultural debris. Mobile sources generate about 77 percent of the statewide CO emissions. Diesel-powered on-road and other mobile vehicles are small CO contributors. Stationary and area-wide sources of CO are the same types of fuel combustion sources that also generate NO_x. The stationary source contribution to statewide CO is small, due in part to widespread use of natural gas as a fuel and the presence of combustion controls.

CO Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	372	3%
Area-wide Sources	2719	20%
On-Road Mobile	7629	55%
Gasoline Vehicles	7492	54%
Diesel Vehicles	137	1%
Other Mobile	3045	22%
Gasoline Vehicles	2409	18%
Diesel Vehicles	275	2%
Other	361	3%
Total Statewide	***13766***	***100%***

Table 2-17

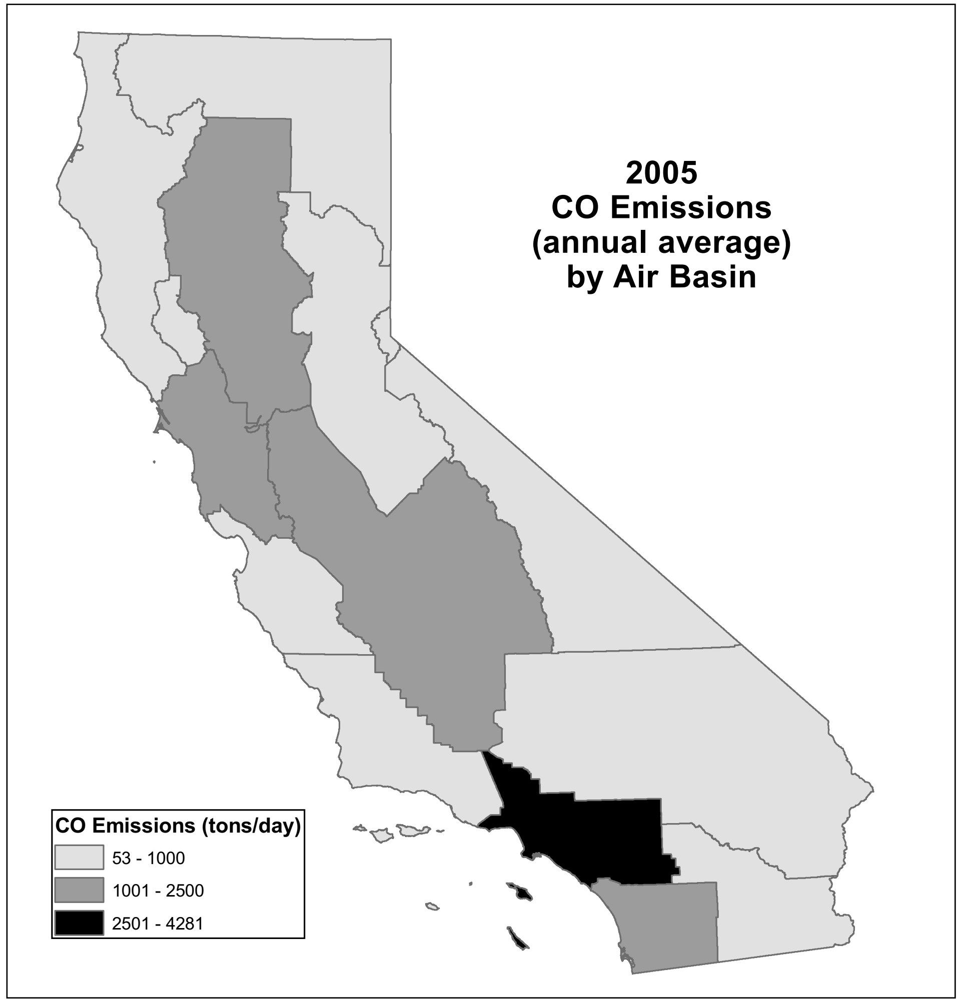

Figure 2-22

Carbon Monoxide - 2004 Air Quality

The State and national carbon monoxide standards are now attained in most areas of California. The requirements for cleaner vehicles and fuels have been primarily responsible for the reductions in CO, despite significant increases in population, the number of vehicle miles traveled each day, and the apparent impact of emissions from Mexico.

However, there is still one problem area: the City of Calexico in Imperial County. While CO concentrations continue to decrease throughout most of the State, the CO problem in Calexico is unique in that this area shares a border with Mexico. There is a high likelihood that cross-border traffic contributes to the local CO problem in this area, and a regional and binational approach may be necessary to develop an effective control strategy. The Calexico area has made progress towards attainment. Peak levels have been declining as have the number of days that State and federal standards are exceeded. In 2004, Calexico had only one exceedance of the State and federal CO standards.

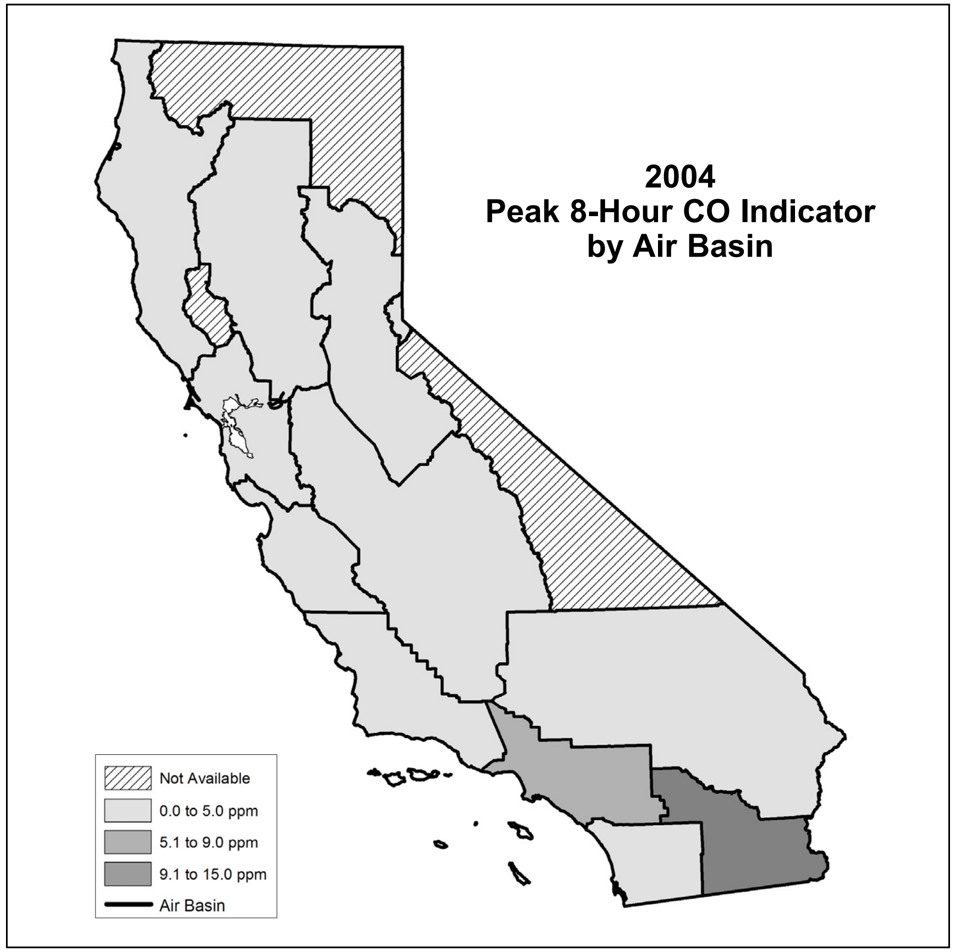

Figure 2-23

Carbon Monoxide - 2004 Air Quality Tables

Maximum Peak 8-Hour Indicator by Air Basin

AIR BASIN	2004 Maximum Peak 8-Hour Indicator in parts per million	Number of Days in 2004 above 8-Hour Standard	
		State	National
Great Basin Valleys Air Basin	Incomplete Data	Incomplete Data	Incomplete Data
Lake County Air Basin	Incomplete Data	Incomplete Data	Incomplete Data
Lake Tahoe Air Basin	1.9	0	0
Mojave Desert Air Basin	2	0	0
Mountain Counties Air Basin	4.8	0	0
North Central Coast Air Basin	1.2	0	0
North Coast Air Basin	2	0	0
Northeast Plateau Air Basin	Incomplete Data	Incomplete Data	Incomplete Data
Sacramento Valley Air Basin	4.2	0	0
Salton Sea Air Basin	10.5	1	1
San Diego Air Basin	4.6	0	0
San Francisco Bay Area Air Basin	4	0	0
San Joaquin Valley Air Basin	4.2	0	0
South Central Coast Air Basin	2.4	0	0
South Coast Air Basin	8.3	0	0

Table 2-18

Sites with Peak 8-Hour Indicator Values above the State CO Standard

Salton Sea Air Basin

- Calexico-Ethel Street

Only one site had peak 8-hour indicator values above the level of the State CO standard during 2004. If an air basin is not listed, the peak indicator values at sites in that air basin were not above the State CO standards.

Table 2-19

Ammonia

2005 Statewide Emission Inventory - Ammonia by Category

Area-wide sources account for 68 percent of the statewide emissions of ammonia. The major area-wide source of ammonia is livestock waste. Ammonia emissions from on-road vehicles are produced by three-way catalyst equipped gasoline vehicles. Ammonia emissions from stationary sources are primarily related to NO_x emission controls and the manufacture of a variety of products.

Ammonia emission sources have strong geographic differences. In the San Joaquin Valley, ammonia emissions are dominated by livestock and other agricultural sources. However, in the South Coast Air Basin, motor vehicle sources are more significant.

NH_3 Emissions (annual average)		
Emissions Source	**tons/day**	**Percent**
Stationary Sources	63	9%
Area-wide Sources	504	75%
On-Road Mobile	101	15%
Gasoline Vehicles	101	15%
Diesel Vehicles	0	0%
Other Mobile*	0	0%
Gasoline Vehicles*	0	0%
Diesel Vehicles*	0	0%
Other*	0	0%
Total Statewide	***670***	***100%***

* No data available

Table 2-20

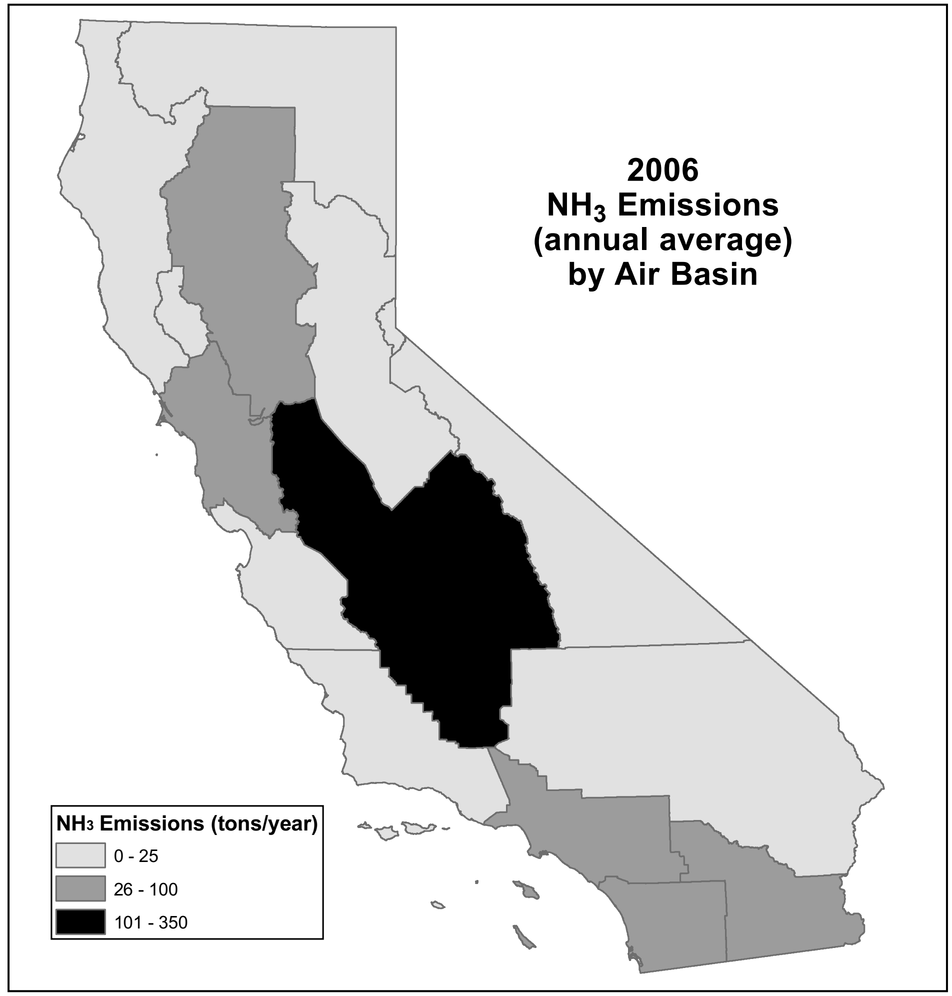

Figure 2-24

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Chapter 3

Statewide Trends and Forecasts -- Criteria Pollutants

Introduction

Emission Trends and Forecasts

Any data prior to this year are derived from historical emissions data where available, and backcasted emissions based on historical socio-economic growth and control information. The most current emissions data available are from 2005. Any data prior to this year are derived from historical emissions data. Future year data are forecasted from the 2005 base year and control measures reported through September 2005. Forecasts take into account emissions data, projected growth rates, and future adopted control measures to calculate emissions in future years.

On a statewide basis, emissions of NO_x increased between 1975 and 1980, but are forecasted to decline between 1980 and 2020. Emissions of ROG decreased steadily between 1975 and 2020. In addition to being ozone precursors, both NO_x and ROG are secondary contributors to PM_{10} and $PM_{2.5}$. Direct PM_{10} emissions show an increase from 1975 to 1990, a slight decrease in 1995, hold relatively constant from 1995 to 2005, and then a slow increase after 2005. Direct $PM_{2.5}$ emissions decreased from 1975 to 1985, increased from 1985 to 1990, decreased slightly between 1990 and 1995, held relatively constant from 1995 to 2005, and are predicted to increase from 2005 to 2020.

Emissions of CO have decreased since 1985 and are forecasted to continue declining. The recent decreases in NO_x, ROG, and CO are occurring even with increases in vehicle miles traveled (VMT) and population.

Statewide SO_x emissions decreased sharply from 1975 through 1985, decreased steadily through 1995, and remained relatively constant through 2005. On-shore SO_x emissions are projected to increase moderately through 2020. Off-shore emissions are projected to increase substantially through 2020 due to increased shipping activity. In 2005, off-shore emissions represent approximately 40 percent of the statewide SO_x emission inventory. By 2020, off-shore emissions are forecasted to comprise 52 percent of the statewide SO_x emissions.

Statewide Emissions (tons/day, annual average)										
Pollutant	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
NO_X	4949	5060	5011	4997	4319	3844	3220	2741	2359	2199
ROG	7026	6602	6068	4737	3761	3128	2430	2167	2046	2004
PM_{10}	1992	2026	2131	2316	2200	2267	2212	2254	2326	2410
PM_{25}	896	874	884	934	862	877	864	879	903	933
CO	41866	38189	36145	30221	22832	17515	13766	11408	9782	8826
SO_x	1319	103	573	520	312	304	301	336	390	463

Table 3-1

Statewide Population and VMT

Airborne pollutants result in large part from human activities, and growth generally has a negative impact on air quality. California is fortunate in that it boasts the world's most progressive emission controls. These controls have resulted in significant air quality improvements, despite substantial growth.

During 1985 through 2004, statewide maximum 1-hour ozone values decreased 59 percent, and maximum 8-hour carbon monoxide values dropped 63 percent. These air quality improvements occurred at the same time the State's population increased 39 percent and the average daily VMT increased 90 percent. Ambient annual average PM_{10} values in the non-desert areas also show improvement: a 43 percent decrease from 1989 to 2004. While the air quality improvements are impressive, additional emission controls will be needed to offset future growth.

Percent Change in Air Quality and Growth

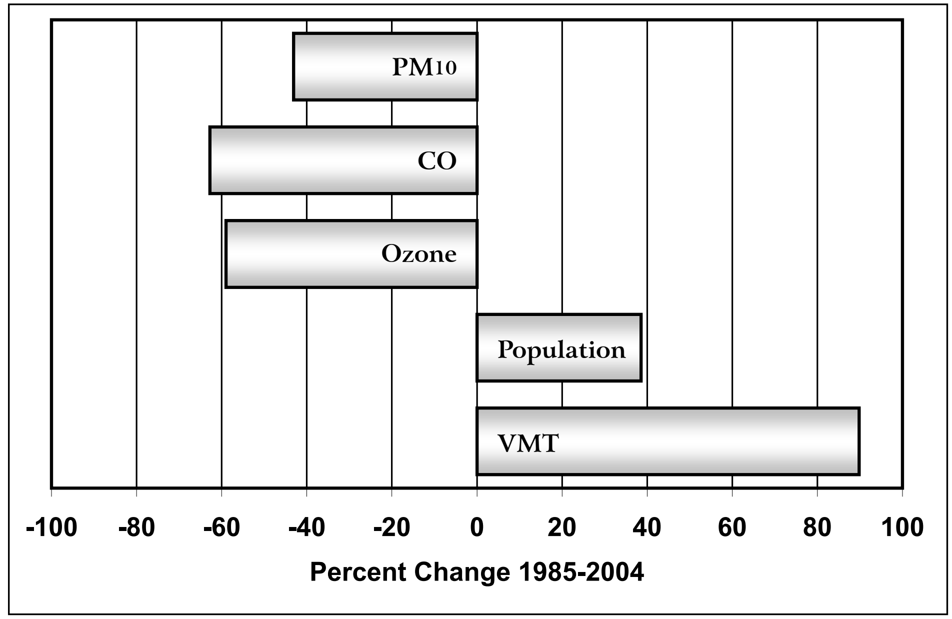

Figure 3-1

Statewide Population and VMT Trends									
Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population (1000s)	23782	26402	29829	31711	34036	37473	40262	42711	45822
Avg. Daily VMT(1000s)	389107	517683	677171	731207	796075	872885	957360	1032915	1109515

Table 3-2

Ozone

Emission Trends and Forecasts - Ozone Precursors

NO_x Emission Trends and Forecasts

NO_x emission standards for on-road motor vehicles were introduced in 1971 and followed in later years by the implementation of more stringent standards and the introduction of three-way catalysts. NO_x emissions from on-road motor vehicles have declined by 28 percent from 1990 to 2000, and NO_x emissions are projected to decrease by an additional 52 percent between 2000 and 2020. This has occurred as vehicles meeting more stringent emission standards enter the fleet, and all vehicles use cleaner burning gasoline and diesel fuel or alternative fuels.

NOx emissions from other mobile categories on the whole decreased from 1990 to 2020. The two largest NOx contributors in the other mobile category are off-road combustion equipment and ships. The emissions from off-road combustion equipment decrease significantly over the entire forecast period. However, the emissions for ships have increased to better reflect actual shipping activity resulting in a fairly constant NO_x emission level for the trend and forecast period for the Other Mobile category as a whole. Stationary source NO_x emissions dropped by 64 percent between 1980 and 2005. This decrease has been largely due to a switch from fuel oil to natural gas and the implementation of combustion controls such as low-NO_x burners for boilers and catalytic converters for both external and internal combustion stationary sources. State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at *www.arb.ca.gov/planning/sip/sip.htm*.

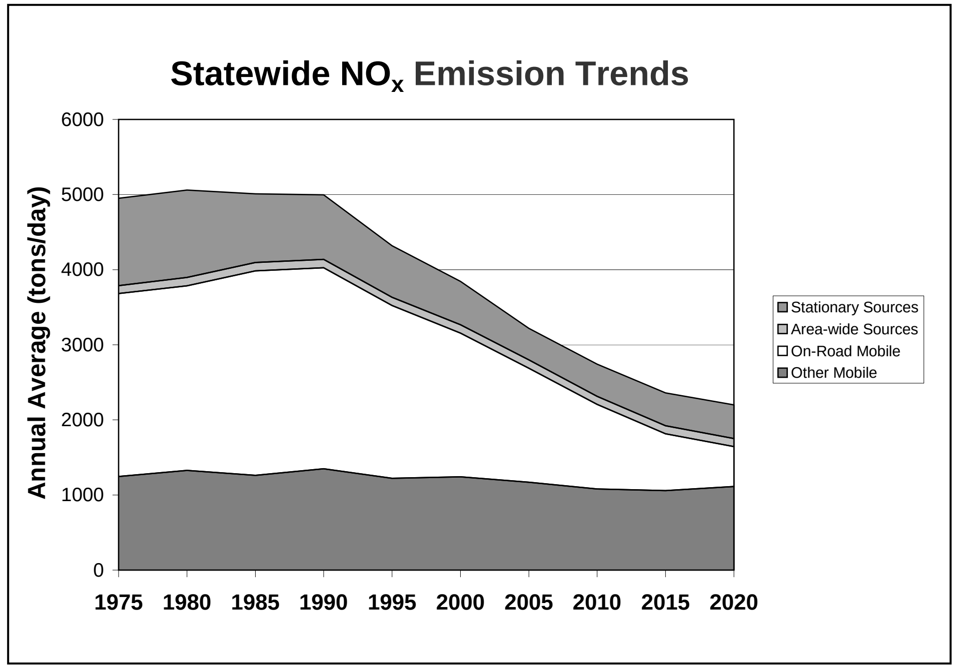

Figure 3-2

ROG Emission Trends and Forecasts

ROG emissions in California are projected to decrease by over 72 percent between 1975 and 2020, largely as a result of the State's on-road motor vehicle emission control program. This includes the use of improved evaporative emission control systems, computerized fuel injection, engine management systems to meet increasingly stringent California emission standards, cleaner gasoline, and the Smog Check program. ROG emissions from other mobile sources are projected to decline between 1990 and 2020 as more stringent emission standards are adopted and implemented. Substantial reductions have also been obtained for area-wide sources through the vapor recovery program for service stations, bulk plants, and other fuel distribution operations. There are also on-going programs to reduce overall solvent ROG emissions from coatings, consumer products, cleaning and degreasing solvents, and other substances used within California. Again, State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For additional information on these forecasts, please refer to the ARB SIP web page at *www.arb.ca.gov/planning/sip/sip.htm*.

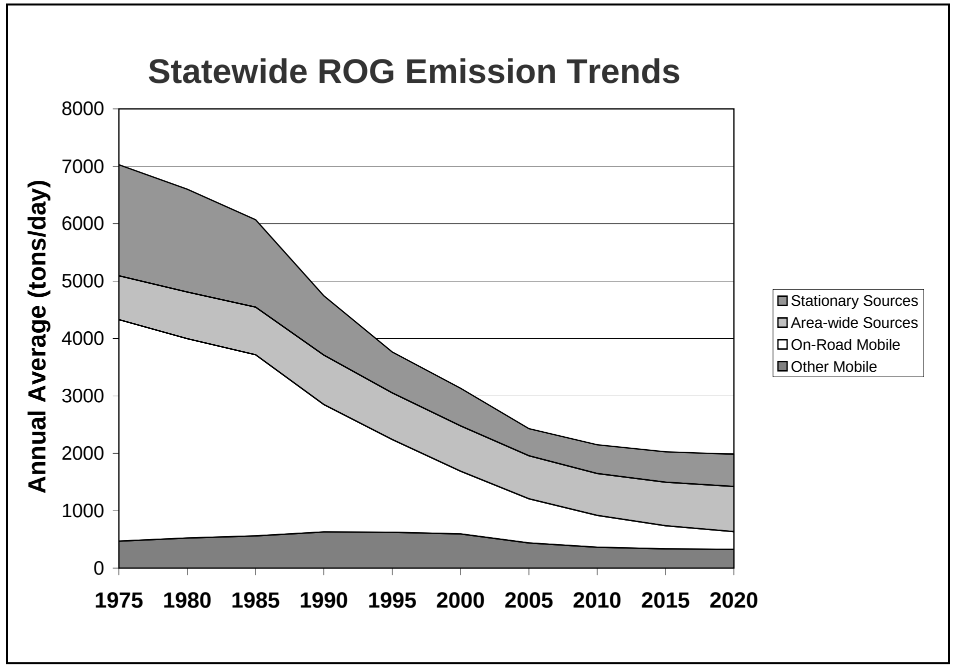

Figure 3-3

Emission Trends and Forecasts - Ozone Precursors

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***4949***	***5060***	***5011***	***4997***	***4319***	***3844***	***3220***	***2741***	***2359***	***2199***
Stationary Sources	1162	1164	915	861	686	577	420	427	437	447
Area-wide Sources	106	111	113	112	110	110	112	108	107	108
On-Road Mobile	2435	2459	2721	2675	2301	1915	1518	1127	757	532
Gasoline Vehicles	2149	1975	1936	1789	1535	1113	757	536	371	266
Diesel Vehicles	286	484	784	885	766	802	761	590	386	266
Other Mobile	1247	1326	1262	1350	1222	1241	1169	1080	1057	1112
Gasoline Fuel	42	47	52	61	60	67	74	67	62	60
Diesel Fuel	980	1066	1003	1052	901	877	754	617	524	474
Other Fuel	224	213	207	237	261	298	341	395	472	578

Table 3-3

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***7026***	***6602***	***6068***	***4737***	***3761***	***3128***	***2430***	***2167***	***2046***	***2004***
Stationary Sources	1933	1792	1520	1031	713	654	473	499	530	561
Area-wide Sources	763	813	830	855	807	784	750	749	777	807
On-Road Mobile	3861	3474	3156	2221	1618	1094	770	554	404	311
Gasoline Vehicles	3845	3445	3110	2178	1583	1063	740	529	383	294
Diesel Vehicles	16	29	46	43	35	30	30	25	20	17
Other Mobile	469	523	561	630	623	596	437	364	335	325
Gasoline Fuel	330	374	425	482	493	470	318	257	234	225
Diesel Fuel	88	96	90	94	84	79	71	57	45	38
Other Fuel	50	52	47	53	46	46	48	51	55	61

Table 3-4

Statewide Air Quality - Ozone

Air quality as it relates to ozone has improved greatly in all areas of California over the last 20 years, despite significant growth. The statewide trend, which reflects values for the South Coast Air Basin, shows that the maximum peak 8-hour and 1-hour indicators declined by almost half from 1985 to 2004. During 1985 to 2004, the statewide population grew by 39 percent and the number of vehicle miles traveled each day was up more than 90 percent. Motor vehicles are the largest source category of ozone precursor emissions, and reducing their emissions will continue to be the cornerstone of California's ozone control efforts. New vehicles must meet the ARB's low emission vehicle standards, which equate to about 95 percent fewer smog-forming emissions than vehicles produced in the 1970s. However, increases in population and driving are partially offsetting the benefits of cleaner vehicles. In addition to motor vehicle controls, the ARB is establishing controls for other sources of ozone precursor emissions, such as consumer products. The ARB and other agencies are also looking at new and more efficient ways of doing business and implementing incentive programs to improve air quality.

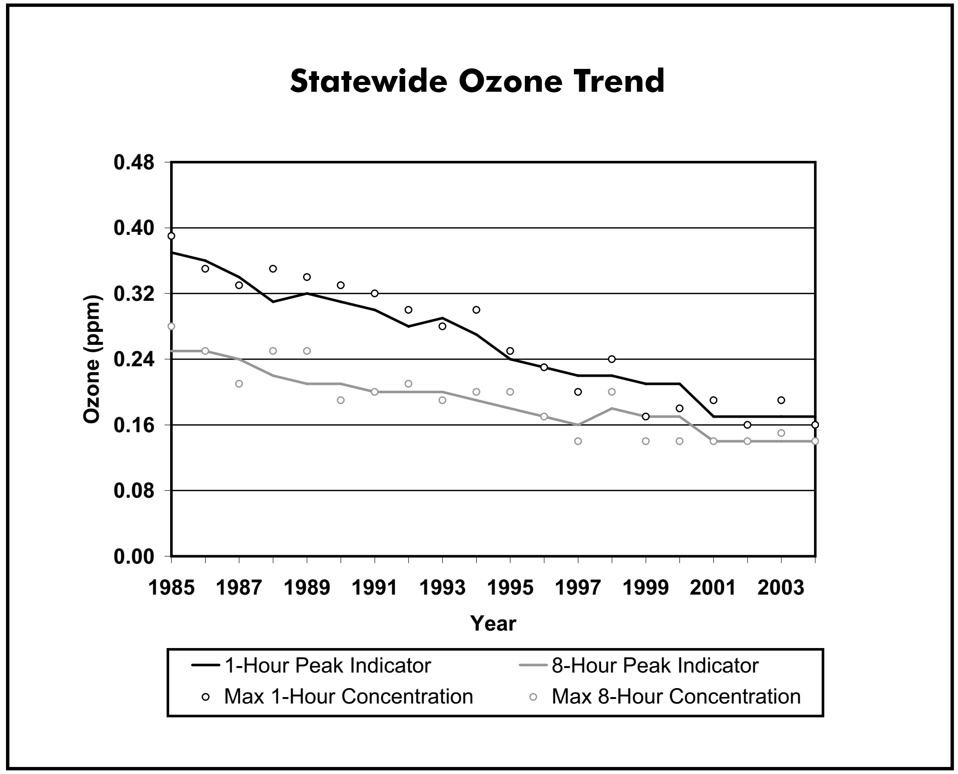

Figure 3-4

Population-Weighted Exposures Over the State Ozone Standard

There are a number of ways to look at how ozone levels have changed over the years. Though simple indicators are most commonly used, complex indicators can offer additional insight concerning air quality. One such indicator is the *population-weighted exposure* indicator. As used here, an "exposure" occurs when a person experiences a one-hour ozone concentration outdoors that is higher than 0.09 ppm, the level of the State standard. The population-weighted exposure indicator considers both the level and the duration of ozone concentrations above the State standard. The annual exposure is the sum of all the hourly exposures during the year and presents the result as an average per exposed person.

In contrast to the peak indicator, which provides an indication of the potential for acute adverse health impacts, the population-weighted exposure provides an indication of the potential for chronic adverse health impacts. For the purposes of computing the exposures in this almanac, individuals are presumed to have been exposed to concentrations measured by the ambient (outdoor) air quality monitoring network. However, daily activity patterns (for example, being inside a building or exercising outdoors) may diminish or increase exposures to some outdoor concentrations that exceed the State standard. While many indicators characterize air quality at an individual monitoring location, the exposure indicator provides an integrated regional perspective. For each hour, the calculations simultaneously consider ozone data from all of the monitors in a region. People living in areas where ozone exceeds the standard are then included in the population-weighted exposure for that hour.

The examples below show two simple exposure calculations. First, a measured ozone concentration of 0.11 ppm for one hour represents an exposure of 0.02 ppm-hours above the State ozone standard of 0.09 ppm:

$$(0.11 \text{ ppm} - 0.09 \text{ ppm}) \times 1 \text{ hour} = 0.02 \text{ ppm-hours}$$

Second, a measured concentration of 0.10 ppm for two hours also equals an exposure of 0.02 ppm-hours:

$$(0.10 \text{ ppm} - 0.09 \text{ ppm}) \times 2 \text{ hours} = 0.02 \text{ ppm-hours}$$

In contrast to these examples, when the concentration is equal to or below the level of the State standard of 0.09 ppm, the exposure is zero. The population associated with these "zero" exposures are not included in the exposure calculations in this almanac because including population with the zero exposures dilutes the real impact of the ozone concentrations that are above the State standard and are, therefore, adversely affecting public health. In all cases, an exposure calculation that excludes the zero values will be higher than one incorporating concentrations at or below the level of the standard (areas of zero exposure).

The population-weighted exposures in Table 3-5 are listed for each year, from 1984 through 2004, for the five most populated areas of California: the South Coast Air Basin, the San Francisco Bay Area Air Basin, the San Joaquin Valley Air Basin, the San Diego Air Basin, and the Sacramento Metropolitan Area (the southern, urbanized portion of the Sacramento Valley Air Basin and a portion of the Mountain Counties Air Basin). While these areas do not encompass all of California's ozone nonattainment areas, they do include the major urban areas where the majority of the State's population lives.

The exposure values listed in Table 3-5 are presented in parts per million to be consistent with the units in which the State standard is expressed. In addition to the exposure values, Table 3-5 also lists the percent of the total population represented in the exposure value. The percent value reflects the percent of the total population in the area that was exposed to an ozone concentration above the level of the State 1-hour standard for at least one hour during the year. Because the exposure result is an average, it may not accurately portray the exposure of any particular individual or subarea. Some people in the region experience higher exposure while others experience lower exposure. Nevertheless, this method provides a reasonable approach for comparing exposures among various regions and for assessing trends in exposure reductions.

The calculations for the exposure indicators are based on all concentrations measured in the area that satisfy the specified data requirements. The population is based on census tract data, and the calculation is performed at the census tract level and then aggregated to the regional level. Exposures for the years 1984 through 1999 use census information for 1990, while exposures for the years 2000 through 2004 use census information for the year 2000. General details about the computational procedure can be found in the ARB publication entitled: *"Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards"* (September 1993).

Ozone Exposures Over the State Standard: Population-Weighted (ppm-hours / person)																					
	1984	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
South Coast Air Basin																					
Exposure	36.58	36.90	35.68	31.41	34.28	29.58	22.10	22.21	21.99	17.96	18.90	13.26	10.67	6.28	8.90	3.28	5.33	6.95	7.16	8.92	5.21
% Pop. Represented*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	100%	92%	98%	99%	100%	88%	78%	91%	83%
San Francisco Bay Area Air Basin																					
Exposure	2.28	1.45	0.85	1.81	1.24	0.67	0.46	0.48	0.54	0.41	0.26	1.06	1.03	0.10	0.95	0.62	0.33	0.35	0.35	0.32	0.11
% Pop. Represented	100%	73%	46%	72%	73%	53%	41%	45%	50%	72%	39%	81%	60%	48%	54%	65%	25%	48%	28%	62%	30%
San Joaquin Valley Air Basin																					
Exposure	7.25	8.09	10.00	10.09	9.38	7.12	5.21	6.09	5.64	6.18	6.43	6.10	6.96	3.73	6.63	4.51	4.63	4.75	5.84	5.24	3.28
% Pop. Represented	97%	97%	95%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	97%
San Diego Air Basin																					
Exposure	6.94	8.17	5.16	5.64	7.40	7.29	6.35	3.92	3.31	2.74	2.28	2.41	1.19	0.83	1.93	0.60	0.52	0.71	0.38	0.45	0.24
% Pop. Represented	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	79%	100%	98%	100%	82%	69%	72%	89%	62%	36%	71%
Broader Sacramento Metropolitan Area																					
Exposure	3.11	2.88	2.57	3.19	4.22	1.83	2.14	2.47	2.35	1.10	1.76	2.20	1.85	0.51	1.98	1.45	1.15	1.08	1.52	1.15	0.43
% Pop. Represented	100%	93%	94%	100%	100%	100%	100%	99%	100%	100%	95%	100%	100%	98%	100%	100%	99%	100%	99%	97%	94%

* *% Population Represented* is the percent of the total population residing in an area exposed to an ozone concentration above the level of the State standard for at least one hour during the year.

Table 3-5

Ozone Transport

Since 1989, the ARB staff has evaluated the impacts of the transport of ozone and ozone precursor emissions from upwind areas to the ozone concentrations in downwind areas. These analyses demonstrate that the air basin boundaries are not true boundaries of air masses. All urban areas are upwind contributors to their downwind neighbors with the exception of San Diego. Figure 3-5 shows the upwind areas that impact downwind areas throughout the State. The ozone problem in some rural areas is caused almost solely by transported pollutants. These areas, although designated as nonattainment, are not required to adopt an air quality plan because local control strategies in these areas would not be effective in reducing ozone concentrations. However, these areas are subject to many statewide control strategies, such as cleaner fuels and low emission vehicles. More detailed information about ozone transport is available on the web at *www.arb.ca.gov/aqd/transport/transport.htm*.

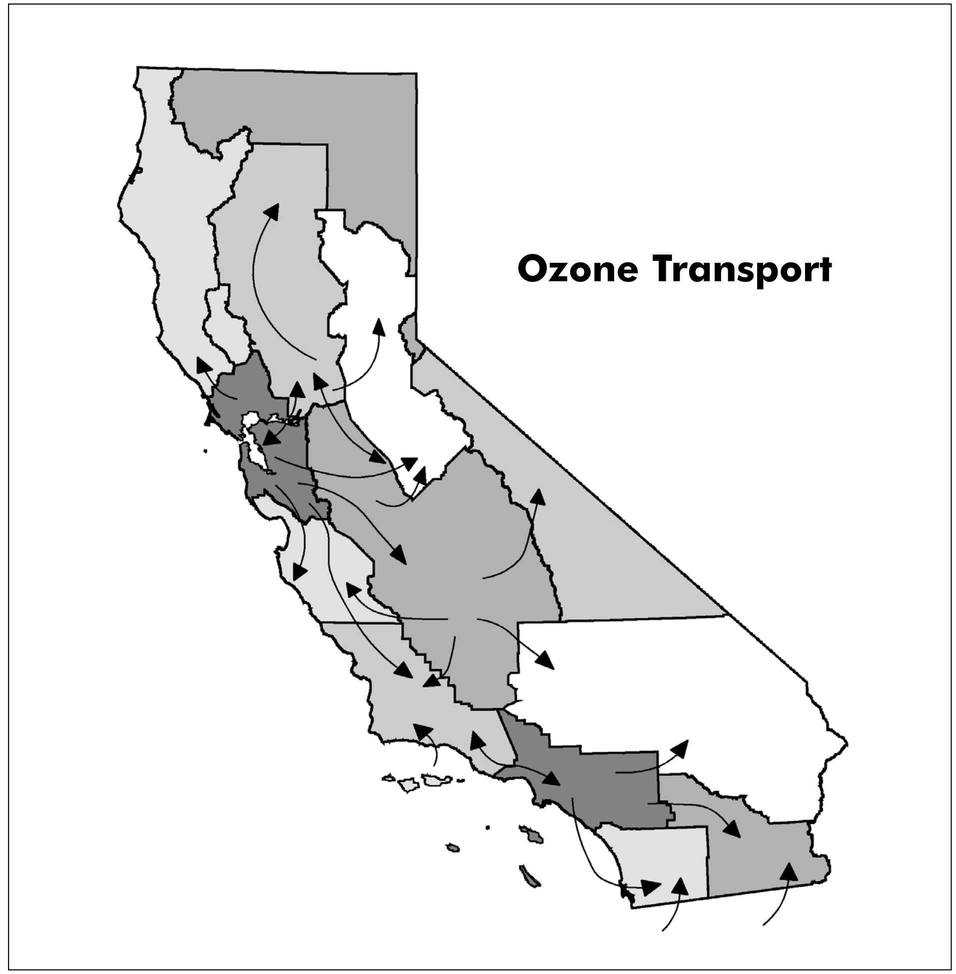

Figure 3-5

Directly Emitted Particulate Matter (PM_{10})

Emission Trends and Forecasts - Directly Emitted PM_{10}

PM_{10} emissions increase from 1975 to 1990, then decrease slightly in 1995, increase in 2000, decrease in 2005, and are projected to slowly increase after 2005. PM_{10} emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions generally increase through the forecast period. Other area-wide sources include farming operations, construction and demolition, and fugitive wind blown dust from agricultural lands. Emissions from these categories have compensating effects resulting in a fairly constant statewide emission level; emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 36 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. PM_{10} emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

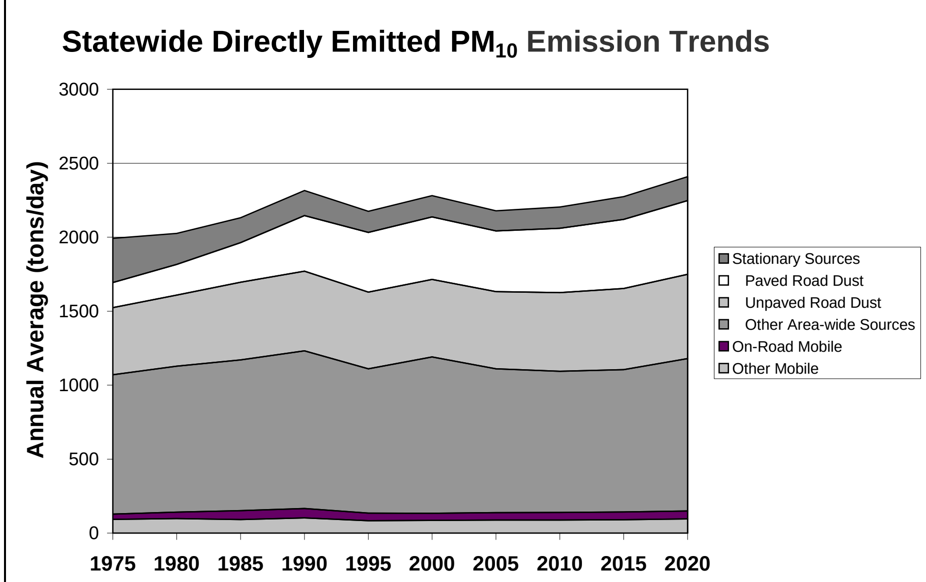

Figure 3-6

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1992***	***2026***	***2131***	***2316***	***2200***	***2267***	***2212***	***2254***	***2326***	***2410***
Stationary Sources	300	210	168	170	142	144	136	144	153	162
Area-wide Sources	1565	1675	1811	1980	1923	1988	1938	1971	2031	2098
Paved Road Dust	168	208	267	376	404	422	411	435	467	498
Unpaved Road Dust	454	480	525	538	518	525	521	531	549	570
Other Area-wide Sources	942	987	1020	1067	976	1056	972	955	963	1030
On-Road Mobile	36	43	60	63	51	49	50	51	52	54
Gasoline Vehicles	22	19	21	25	27	30	34	39	43	47
Diesel Vehicles	14	24	38	38	24	18	16	12	9	8
Other Mobile	93	98	92	103	84	86	88	88	90	96
Gasoline Fuel	6	7	8	10	11	13	15	17	18	19
Diesel Fuel	63	68	61	66	50	48	44	37	31	26
Other Fuel	24	23	23	27	23	25	29	34	40	50

Table 3-6

Directly Emitted Particulate Matter ($PM_{2.5}$)

Emission Trends and Forecasts - Directly Emitted $PM_{2.5}$

$PM_{2.5}$ emissions decrease from 1975 to 1980 as a result of reduced stationary source emissions. Emissions increase slightly between 1980 and 1990, hold steady through 2005, and are projected to increase after 2005. $PM_{2.5}$ emissions are dominated by area-wide sources. Emissions from paved road dust more than double between 1975 and 2000. Unpaved road dust emissions increase through the year 1990, decrease in 1995, hold relatively constant through the year 2010, with increased emissions expected after 2010. Other area-wide source emissions increase slightly over the forecast period. The increase in emissions of unpaved and paved road dust are due to increases in VMT over these roads. Exhaust emissions from diesel mobile sources dropped by 36 percent from 1990 to 2000 due to more stringent emissions standards and the introduction of cleaner burning diesel fuel. $PM_{2.5}$ emissions from stationary sources are expected to increase slightly in the future due to industrial growth.

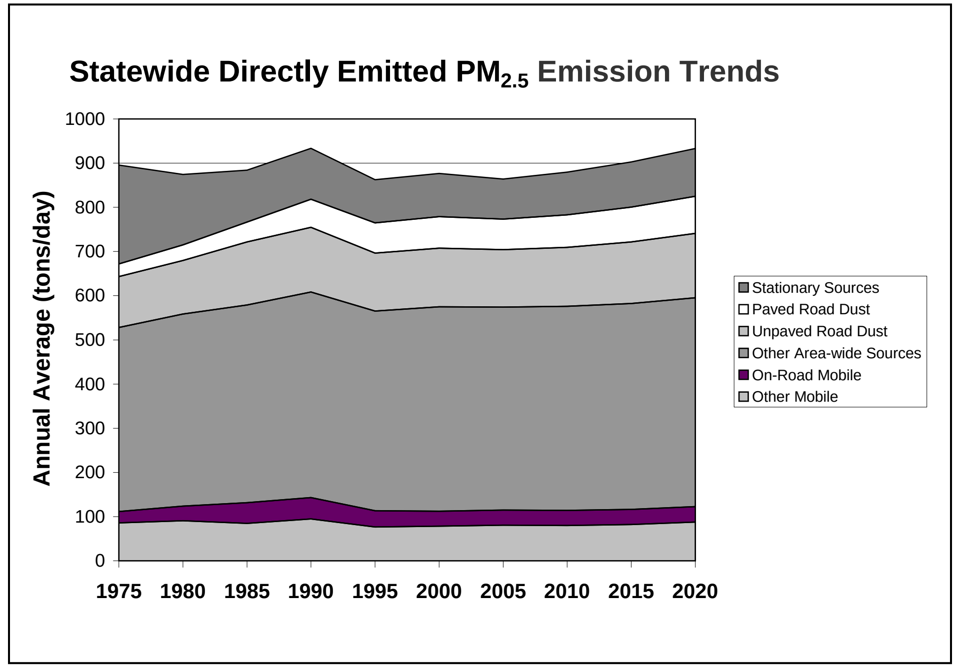

Figure 3-7

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***896***	***874***	***884***	***934***	***862***	***877***	***864***	***879***	***903***	***933***
Stationary Sources	224	160	117	115	98	98	91	97	102	108
Area-wide Sources	560	591	635	675	651	667	659	669	684	702
Paved Road Dust	28	35	45	63	68	71	69	73	79	84
Unpaved Road Dust	115	121	143	147	131	133	130	134	139	146
Other Area-wide Sources	416	435	447	465	452	463	459	462	466	473
On-Road Mobile	26	33	47	48	37	34	34	34	34	35
Gasoline Vehicles	13	11	12	13	15	17	20	23	26	28
Diesel Vehicles	12	22	35	35	22	17	15	11	9	7
Other Mobile	86	91	85	95	77	78	80	80	82	88
Gasoline Fuel	4	5	6	7	8	10	12	13	14	15
Diesel Fuel	58	63	56	61	46	44	40	34	29	24
Other Fuel	23	23	22	26	23	25	28	33	40	49

Table 3-7

Statewide Air Quality - PM_{10}

In contrast to ozone and carbon monoxide, PM_{10} concentrations do not relate as well to growth in population or vehicle usage, and high PM_{10} concentrations do not always occur in high population areas. Activities that contribute directly to high PM_{10} include wood burning, agricultural activities, and driving on unpaved roads. In addition, emissions from stationary sources and motor vehicles form secondary particles that contribute to PM_{10} in many areas. Figure 3-8 shows the statewide annual average for PM_{10} concentrations for a non-desert area. The trend line reflects, for the most part, the South Coast Air Basin. The low value for the annual average in 1988 is due to the limited number of monitors with complete data for this year during the startup of the PM_{10} monitoring network. The period between 1989 and 2004 provides a better indication of trends. Over this period, the three-year average of the annual average shows a decrease of more than 32 percent. However, there is a great deal of variability, especially during the late 1990's. Much of this variability may be due to meteorology rather than changes in emissions. Currently, over 99 percent of Californians live in air basins with concentrations that violate the State PM_{10} standards during at least part of the year. As a result, PM is commanding greater attention.

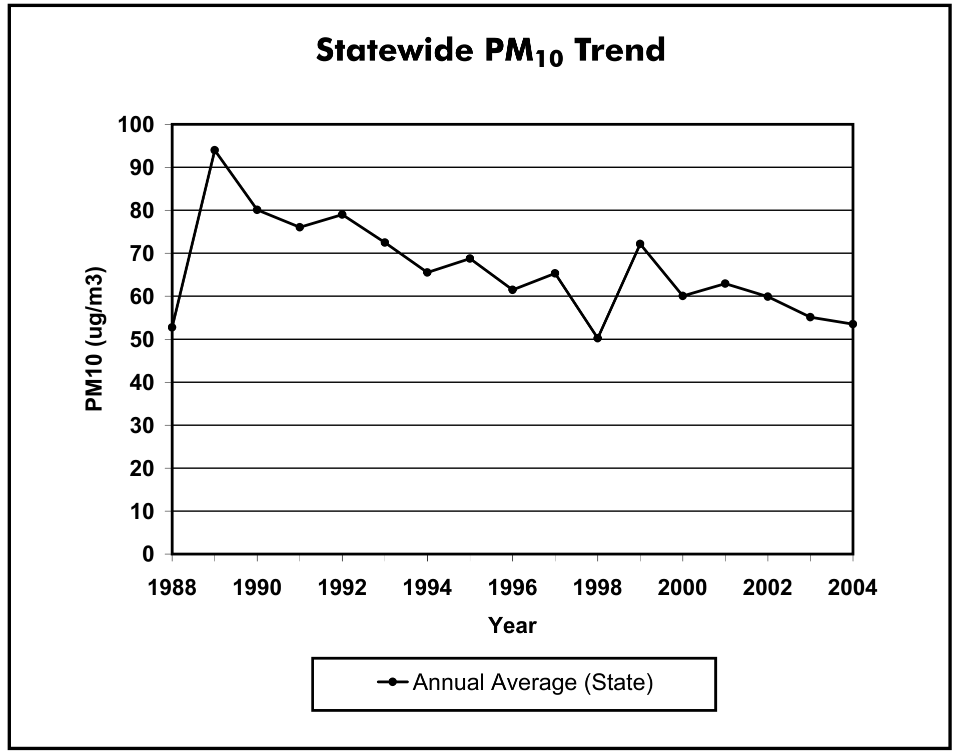

Figure 3-8

In 2003, the Legislature enacted Senate Bill 656 (SB656) to reduce public exposure to PM_{10} and $PM_{2.5}$. As a first step in the implementation of SB656, in November 2004, the ARB approved an extensive list of the most readily available, feasible, cost-effective control measures that can be employed by air districts to reduce PM_{10} and $PM_{2.5}$. The goal is to make progress towards attaining the State and national PM_{10} and $PM_{2.5}$ standards.

Statewide Air Quality - $PM_{2.5}$

Comprehensive monitoring for $PM_{2.5}$ began in 1999, therefore only limited data are available to evaluate statewide trends. Currently, most urban areas in the State, as well as several isolated sub-areas violate the State $PM_{2.5}$ annual average standard. Activities that contribute to high $PM_{2.5}$ concentrations include direct particulate emissions from mobile sources and burning, as well as the formation of $PM_{2.5}$ from the reactions of precursor gases. Because attainment plans due in 2008 for the national $PM_{2.5}$ standards are the focus of current planning efforts. Figure 3-9 shows the maximum statewide annual average $PM_{2.5}$ concentrations from 1999 through 2004 from the national perspective. The national annual average is also used in the air basin summaries in Chapter 4. Over the six year period, the annual average shows a decrease of approximately 29 percent. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. As with PM_{10}, $PM_{2.5}$ represents one of the most formidable health challenges in California. The measures adopted as part of SB656 to reduce PM_{10} and $PM_{2.5}$ (program description can be found on the ARB website at *www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm*), as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$.

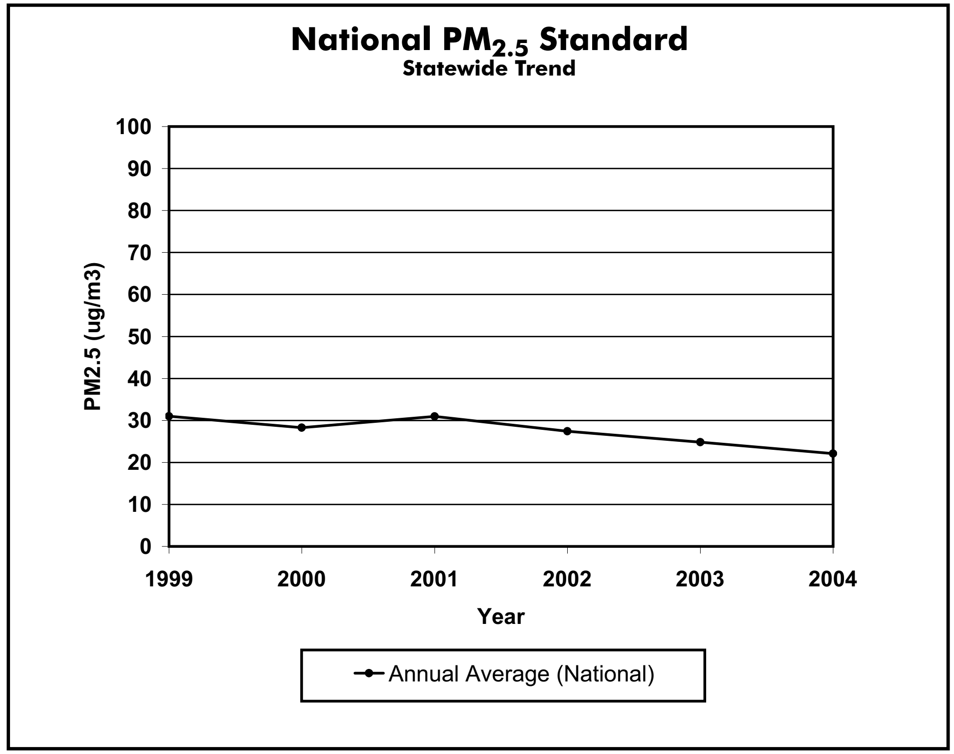

Figure 3-9

Carbon Monoxide (CO)

Emission Trends and Forecasts - Carbon Monoxide

Since 1975, even though VMT have continued to climb, the adoption of more stringent motor vehicle emissions standards has dropped statewide CO emissions from on-road motor vehicles by over 78 percent in 2005. With continued vehicle fleet turnover to cleaner vehicles, including super ultra low emitting vehicles (SULEVs) and zero emission vehicles (ZEVs), and the incorporation of cleaner burning fuels, CO emissions are forecast to continue decreasing through the year 2020. CO emissions from other mobile sources are also projected to decrease through 2010 as more stringent emissions standards are implemented with moderate increases expected after 2010. CO emissions from area-wide sources are expected to increase slightly due to increased waste burning and additional residential fuel combustion resulting from population increases.

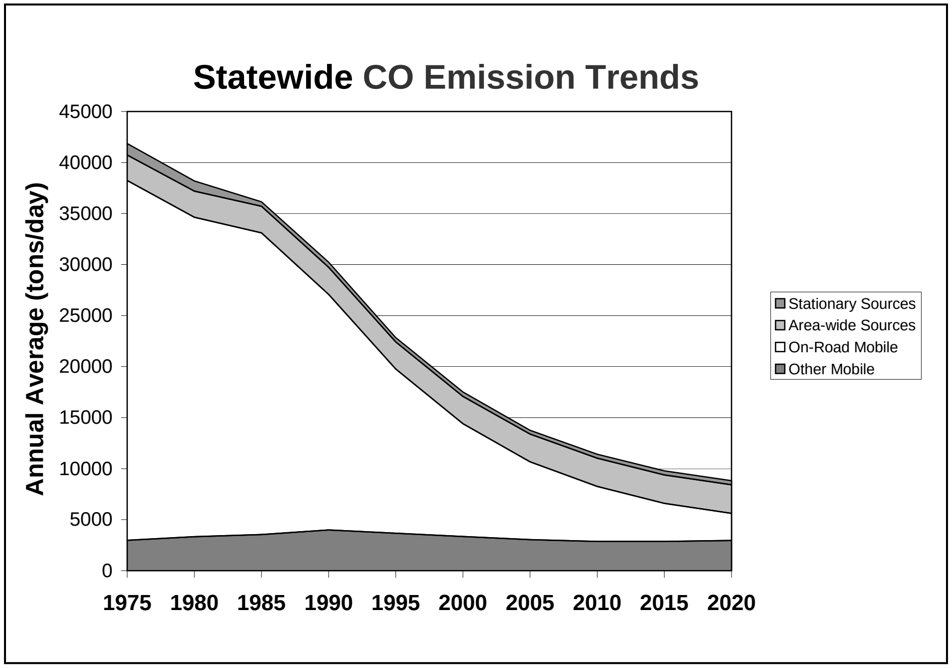

Figure 3-10

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***41866***	***38189***	***36145***	***30221***	***22832***	***17515***	***13766***	***11408***	***9782***	***8826***
Stationary Sources	1125	998	440	491	420	433	372	390	402	417
Area-wide Sources	2500	2560	2604	2658	2652	2675	2719	2759	2773	2791
On-Road Mobile	35269	31295	29565	23087	16090	11059	7629	5397	3744	2661
Gasoline Vehicles	35199	31171	29359	22878	15915	10909	7487	5272	3636	2561
Diesel Vehicles	69	124	205	209	174	150	143	125	108	101
Other Mobile	2972	3336	3537	3986	3671	3347	3045	2862	2863	2957
Gasoline Fuel	2228	2521	2791	3180	2956	2680	2392	2200	2183	2251
Diesel Fuel	366	415	401	430	361	314	275	256	247	245
Other Fuel	378	400	345	375	353	353	378	405	432	461

Table 3-8

Statewide Air Quality - Carbon Monoxide

Similar to ozone, carbon monoxide concentrations in all areas of California have decreased substantially over the last 20 years, despite significant growth. Statewide, the maximum peak 8-hour indicator declined about 50 percent from 1985 to 2004.

During 2003, measured CO concentrations exceeded the State and national standards only in San Diego County. San Diego experienced unusually high CO values during late October, including levels that exceeded the CO standards on October 28, 2003. These high values were due to extensive wildfires that impacted air quality throughout southern California. These types of exceptional events do not affect the area's attainment status.

In 2004, CO levels returned to normal throughout the state. San Diego County CO levels dropped to less than half of what they were in 2003. Of the five major air basins covered in the Almanac, none exceeded the State or national 8-hour standards.

The introduction of cleaner fuels has helped bring the entire State into attainment with the exception of the City of Calexico (Note: Although the South Coast Air Basin is designated as nonattainment for the national CO standards, CO concentrations in this area no longer violate the national standards.). While cleaner fuels will have a continuing impact on carbon monoxide levels, additional emission reductions will be needed in the future to keep pace with increases in population and vehicle usage. These reductions will come from continued fleet turnover, expanded use of low emission vehicles, and measures to promote less polluting modes of transportation.

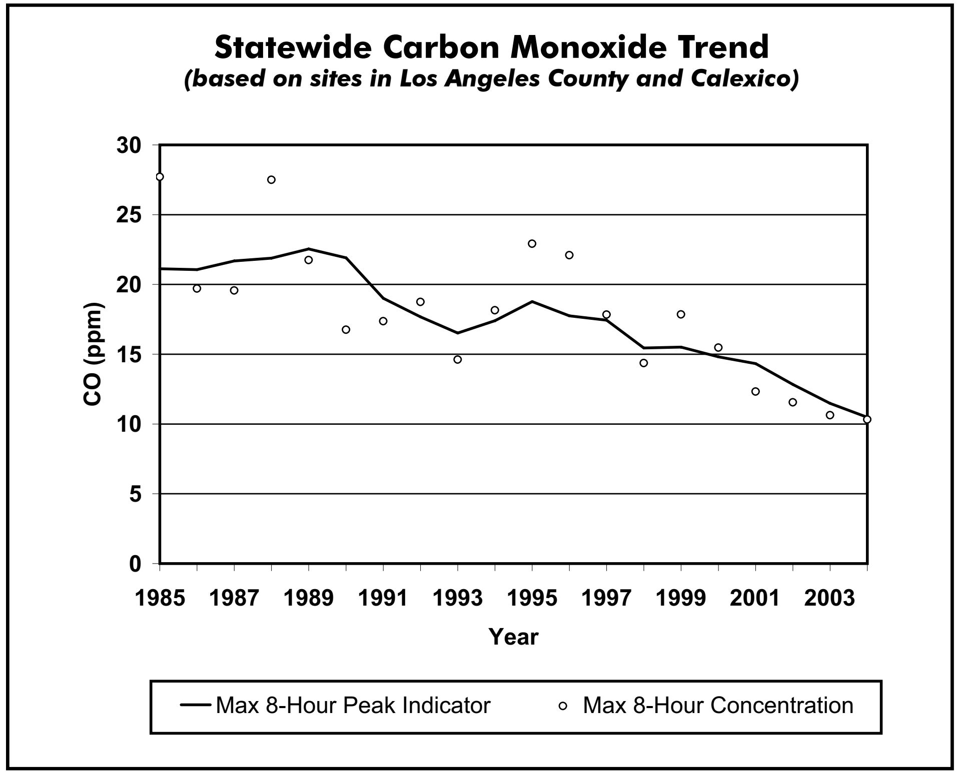

Figure 3-11

Statewide Air Quality - Lead

The decrease in lead emissions and ambient lead concentrations over the past 20 years is California's most dramatic success story. The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent ARB regulations have virtually eliminated all lead from the gasoline now sold in California. All areas of the State are currently designated as attainment for the State lead standard (the U.S. EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, the ARB identified lead as a toxic air contaminant in 1997.

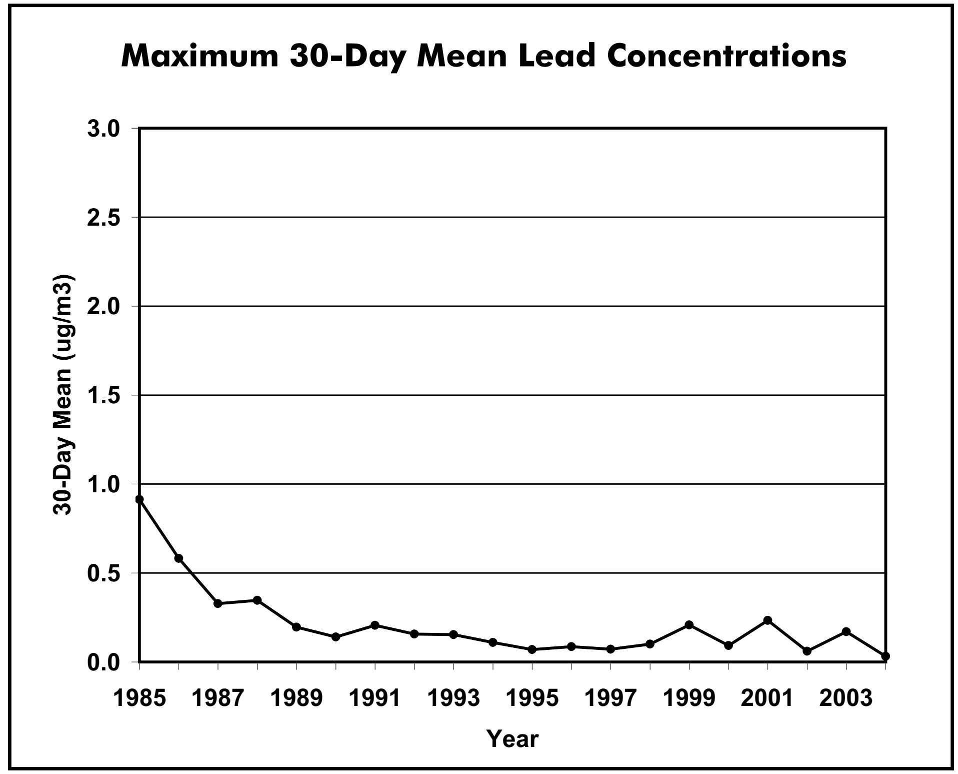

Figure 3-12

Sulfur Dioxide

Emission Trends and Forecasts - Oxides of Sulfur

Oxides of Sulfur (SO_x) is a group of compounds of sulfur and oxygen. A major constituent of SO_x is sulfur dioxide (SO_2). Emissions of SO_x declined tremendously in California between 1975 and 2005. Emissions in 2005 are about 77 percent less than emissions in 1975. Sulfur dioxide emissions from stationary sources decreased between 1975 and 2005 due to improved industrial source controls and switching from fuel oil to natural gas for electric generation and industrial boilers. The SO_x emissions from land-based on- and off-road gasoline and diesel-fueled engines and vehicles have also decreased due to lower sulfur content in the fuel; and recent regulations adopted by the ARB will reduce the sulfur content in fuel used by commercial harbor craft such as tug boats and fishing vessels beginning in 2006. However, as shown in the table below, the SO_x emissions from the "other mobile" categories are expected to increase in the future. This is due to the significant growth in shipping activities predicted for California and the high-sulfur fuels that ocean-going ships typically use. The ARB recently adopted a regulation for fuels used in ship auxiliary engines that will help offset this trend. This rule is expected to reduce SO_x emission by 22 tons per day in 2007. In addition, ARB is investigating other options for reversing this trend.

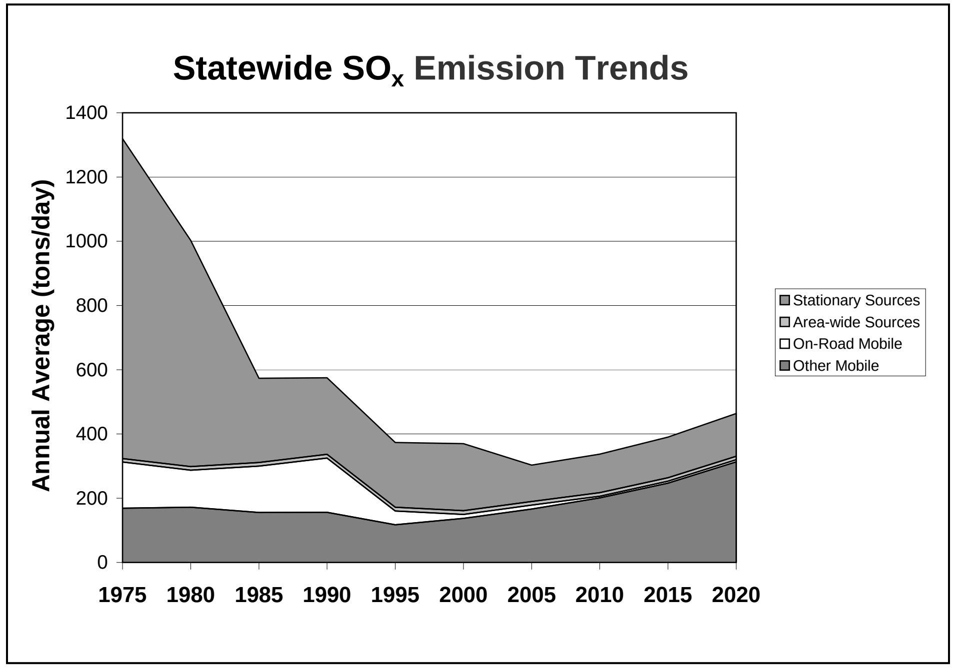

Figure 3-13

SO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1319***	***1003***	***573***	***520***	***312***	***304***	***301***	***336***	***390***	***463***
Stationary Sources	996	704	262	183	141	143	112	119	126	132
Area-wide Sources	11	11	11	12	11	11	11	11	11	11
On-Road Mobile	144	115	144	169	43	13	12	5	6	6
Gasoline Vehicles	108	52	55	60	36	5	4	4	5	5
Diesel Vehicles	35	63	89	109	7	7	9	1	1	1
Other Mobile	169	172	156	156	117	137	166	201	247	314
Gasoline Fuel	7	8	9	1	1	1	1	2	2	2
Diesel Fuel	71	82	68	67	16	18	20	21	23	25
Other Fuel	91	83	79	88	100	118	145	179	223	287

Table 3-9

Nitrogen Dioxide

Emission Trends and Forecasts - Oxides of Nitrogen

Nitrogen dioxide (NO_2) is a colorless, tasteless gas that can cause lung damage, chronic lung disease, and respiratory infections. Nitrogen dioxide is a component of oxides of nitrogen (NO_x), and its presence in the atmosphere can be correlated with emissions of NO_x. Statewide emissions of NO_x decreased by 36 percent between 1980 and 2005 and are projected to decrease by almost 32 percent from 2005 to 2020 as a result of more stringent emissions standards for stationary source combustion and motor vehicles, and cleaner burning fuels. The introduction of lower emitting vehicles will continue to further reduce NO_x emissions.

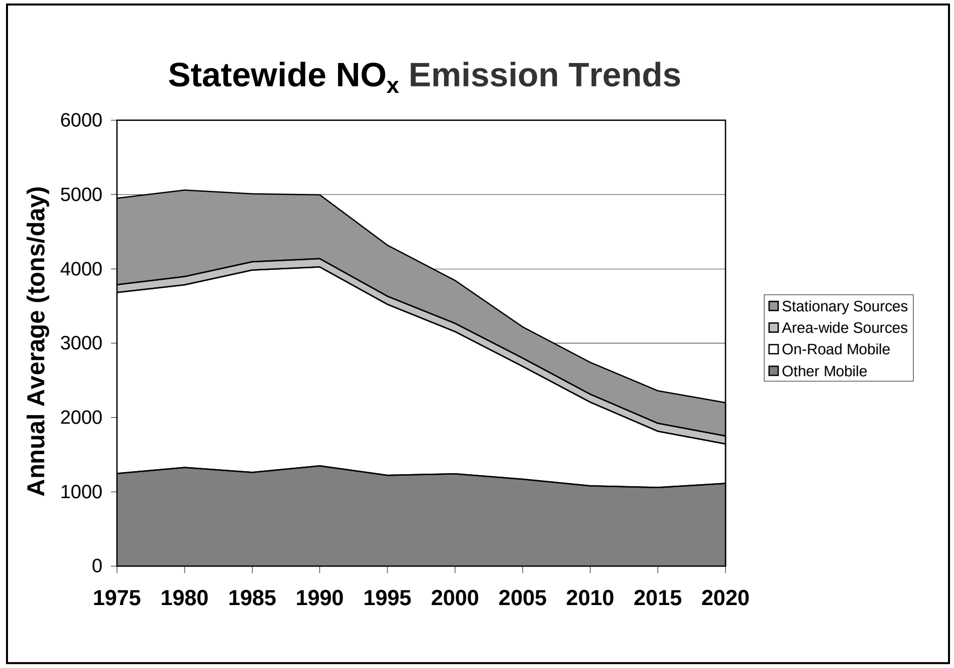

Figure 3-14

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***4949***	***5060***	***5011***	***4997***	***4319***	***3844***	***3220***	***2741***	***2359***	***2199***
Stationary Sources	1162	1164	915	861	686	577	420	427	437	447
Area-wide Sources	106	111	113	112	110	110	112	108	107	108
On-Road Mobile	2435	2459	2721	2675	2301	1915	1518	1127	757	532
Gasoline Vehicles	2149	1975	1936	1789	1535	1113	757	536	371	266
Diesel Vehicles	286	484	784	885	766	802	761	590	386	266
Other Mobile	1247	1326	1262	1350	1222	1241	1169	1080	1057	1112
Gasoline Fuel	42	47	52	61	60	67	74	67	62	60
Diesel Fuel	980	1066	1003	1052	901	877	754	617	524	474
Other Fuel	224	213	207	237	261	298	341	395	472	578

Table 3-10

Statewide Air Quality - Nitrogen Dioxide

Oxides of nitrogen (NO_x) emissions are a by-product of combustion from both mobile and stationary sources, and they contribute to ambient nitrogen dioxide (NO_2) concentrations. Since 1985, maximum NO_2 concentrations have decreased over 57 percent, due primarily to the implementation of tighter controls on both mobile and stationary sources. Although many of these controls were implemented to reduce ozone, they also benefited NO_2. All areas of California are currently designated as attainment for the State nitrogen dioxide standard and unclassified/attainment for the national nitrogen dioxide standard. Projections show NO_x emissions will continue to decline, thereby assuring continued attainment.

ARB is currently reviewing the State standard to determine, based on the most recent health studies, if it is sufficient to protect public health.

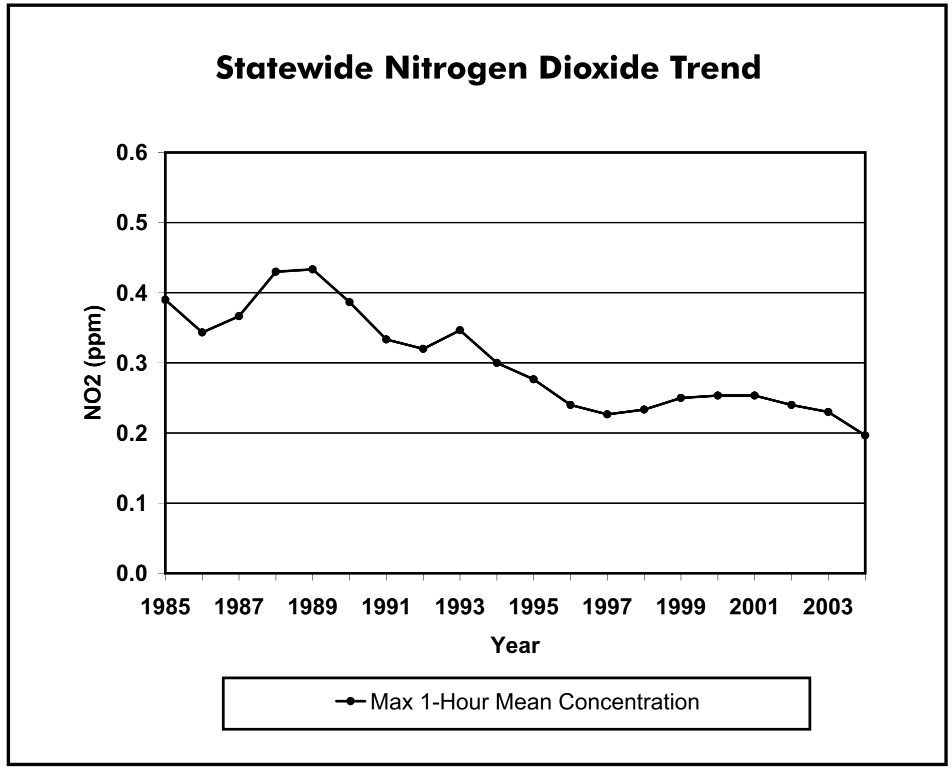

Figure 3-15

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Chapter 4

Air Basin Trends and Forecasts -- Criteria Pollutants

Introduction

In addition to the peak indicator, there are several other air quality statistics provided in this chapter and in the appendices. These include the fourth highest 1-hour ozone concentration in three years, which is summarized from the monitoring data, and the average of the 4th highest 8-hour ozone concentrations in three years, which is a calculated value. These values are provided for the five major air basins in this chapter and for individual counties in Appendix A.

In many cases, these two statistics represent the national 1-hour and national 8-hour ozone design values, which are used to determine an area's attainment status. These calculations do not reflect data completeness requirements or the boundaries of a nonattainment area, which may differ from county or air basin boundaries in some parts of California. Design values are available on the web at *www.arb.ca.gov/airqualitytoday* under "recent year's ozone air quality." When evaluating these statistics, keep in mind that they represent data for a three-year period. For example, the 2004 fourth highest 1-hour ozone concentration in three years represents data for the period 2002-2004.

Days above the State or national standards (exceedance days) often fluctuate when comparing one year to another. When characterizing a percentage increase or decrease in exceedance days, this almanac compares three-year averages. For example, exceedance days for 1983, 1984, and 1985 are averaged and then compared to the average of exceedance days for the years 2003, 2004, and 2005. This gives a much more stable indicator of long-term progress.

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South Coast Air Basin

Introduction - Area Description

The South Coast Air Basin is California's largest metropolitan region. The area includes the southern two-thirds of Los Angeles County, all of Orange County, and the western urbanized portions of Riverside and San Bernardino counties. It covers a total of 6,480 square miles, is home to more than 43 percent of California's population, and generates about 29 percent of the State's total criteria pollutant emissions.

The South Coast Air Basin generally forms a lowland plain, bounded by the Pacific Ocean on the west and by mountains on the other three sides. In terms of air pollution potential, there are probably few areas less suited for urban development. The warm sunny weather associated with a persistent high pressure system is conducive to the formation of ozone, commonly referred to as "smog." The problem is further aggravated by the surrounding mountains, frequent low inversion heights, and stagnant air conditions. All of these factors act together to trap pollutants in the air basin.

Pollutant concentrations in parts of the South Coast Air Basin are among the highest in the Nation. As a result, controlling the contributing emission sources poses a great challenge to State and local air pollution control agencies.

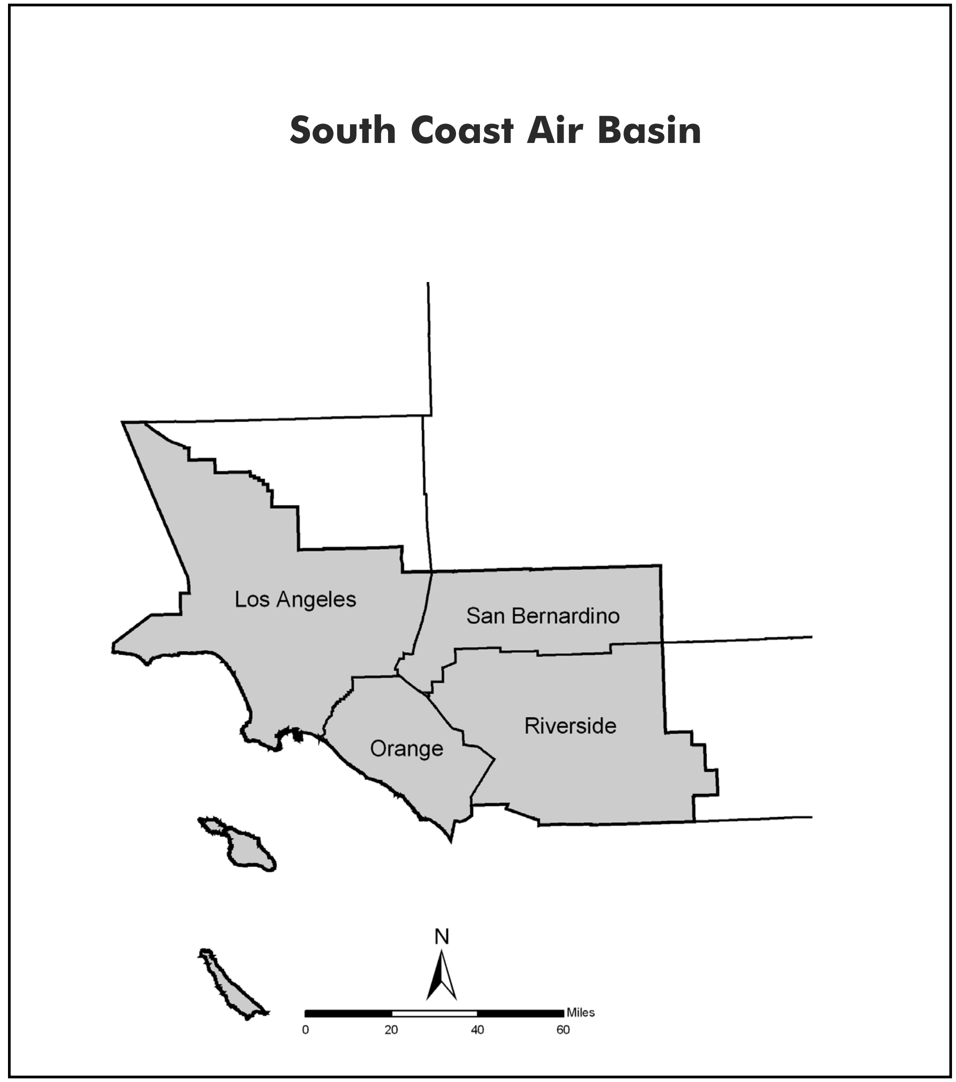

Figure 4-1

South Coast Air Basin

Emission Trends and Forecasts

Overall, since 1975 the emission levels for CO and the ozone precursors NO_x and ROG have been decreasing in the South Coast Air Basin and are projected to continue decreasing through 2020. The decreases are predominantly due to motor vehicle controls and reductions in evaporative emissions. In the South Coast Air Basin, on-road motor vehicles are the largest contributors to CO, NO_x, and ROG emissions. Other mobile sources are also significant contributors to CO and NO_x emissions. State Implementation Plan (SIP) and conformity inventory forecasts may differ from the forecasts presented in this almanac. For more information on these forecasts, please see the ARB SIP web page at *www.arb.ca.gov/sip/sip.htm*.

South Coast Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_X	1712	1600	1694	1553	1315	1183	957	756	586	496
ROG	2642	2270	2245	1760	1319	1056	684	567	517	492
PM_{10}	228	239	261	347	330	325	276	278	284	292
$PM_{2.5}$	119	110	108	125	108	107	97	97	98	100
CO	16137	13368	13099	10309	7547	5451	3838	2943	2395	2056

Table 4-1

South Coast Air Basin

Population and VMT

Both population and the daily VMT will grow at high rates in the South Coast Air Basin from 1980 to 2020. While high growth rates are often associated with corresponding increases in emissions and pollutant concentrations, aggressive emission control programs in the South Coast Air Basin have resulted in emission decreases and a continuing improvement in air quality.

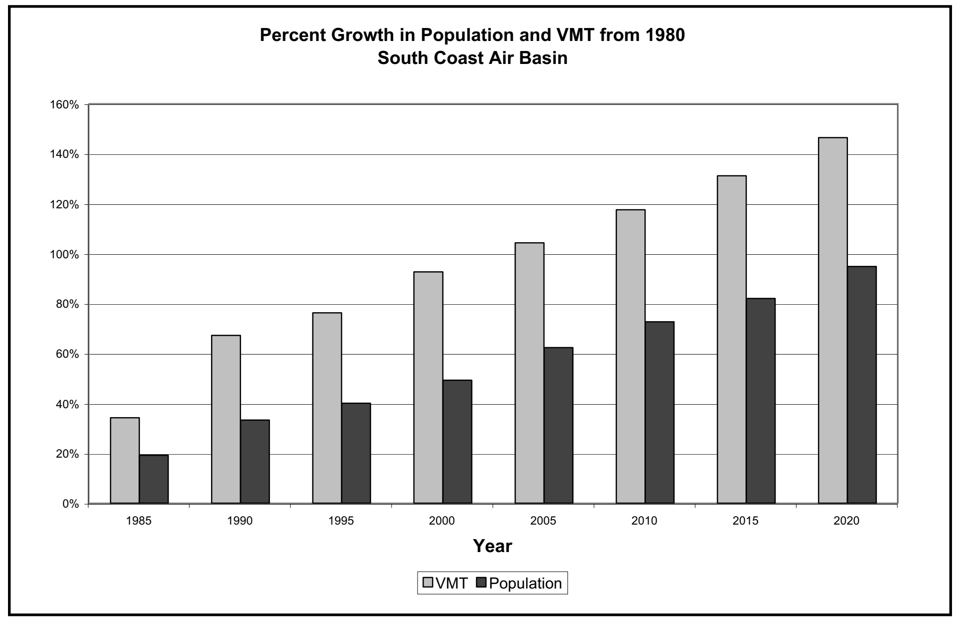

Figure 4-2

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population (1000s)	10605	11698	13084	13745	14688	15984	16728	17389	18051
Avg. Daily VMT/1000	158732	221550	275902	290888	317873	337083	358938	381397	406622

Table 4-2

South Coast Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO_x and ROG in the South Coast Air Basin are generally following the statewide downward trend. Motor vehicle miles traveled in the basin are increasing, but NO_x and ROG emissions from on-road vehicles are dropping as more stringent vehicle emission standards have been adopted. These decreases in NO_x and ROG emissions are projected to continue between 2000 and 2020, as even more stringent motor vehicle standards are implemented and as newer, lower-emitting vehicles become a larger percentage of the fleet. NO_x emissions from electric utilities in the air basin have declined substantially since 1975, despite a nationwide increase in emissions from electric utilities in the same time period. These large reductions are primarily due to increased use of natural gas as the principal fuel for power plants, and control rules that limit NO_x emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1712***	***1600***	***1694***	***1553***	***1315***	***1183***	***957***	***756***	***586***	***496***
Stationary Sources	304	263	227	169	120	104	58	57	56	56
Area-wide Sources	31	34	34	28	26	26	28	22	21	22
On-Road Mobile	1026	954	1094	1000	869	751	581	426	282	196
Gasoline Vehicles	921	768	788	700	594	432	270	186	129	92
Diesel Vehicles	105	186	306	299	275	319	311	239	153	103
Other Mobile	351	349	339	356	300	301	290	250	227	223
Gasoline Fuel	20	21	22	24	22	25	26	22	19	19
Diesel Fuel	303	301	287	291	233	229	202	160	132	118
Other Fuel	28	28	29	40	45	48	62	68	76	86

Table 4-3

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***2642***	***2270***	***2245***	***1760***	***1319***	***1056***	***684***	***567***	***517***	***492***
Stationary Sources	583	482	497	456	295	258	110	114	119	126
Area-wide Sources	207	222	237	231	203	191	169	155	162	168
On-Road Mobile	1669	1375	1306	852	612	412	275	196	146	113
Gasoline Vehicles	1663	1364	1288	838	600	402	265	187	138	107
Diesel Vehicles	6	11	17	14	12	10	10	9	7	6
Other Mobile	184	192	205	221	209	195	130	102	91	86
Gasoline Fuel	148	157	171	185	178	163	100	77	69	65
Diesel Fuel	29	28	27	27	23	22	20	16	12	10
Other Fuel	7	7	7	8	9	9	10	10	10	11

Table 4-4

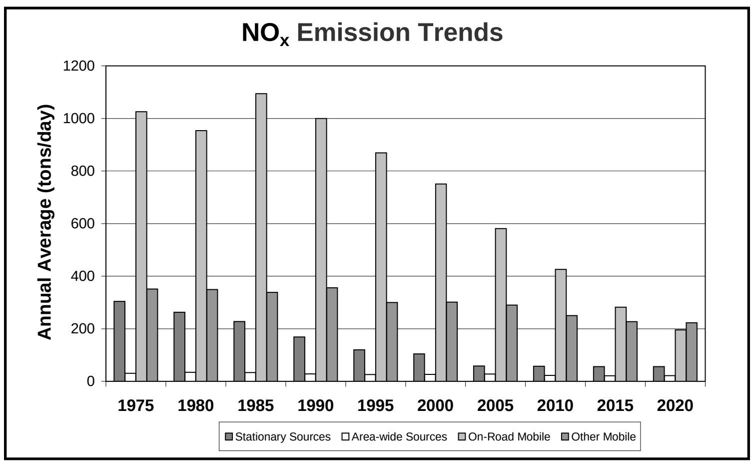

Figure 4-3

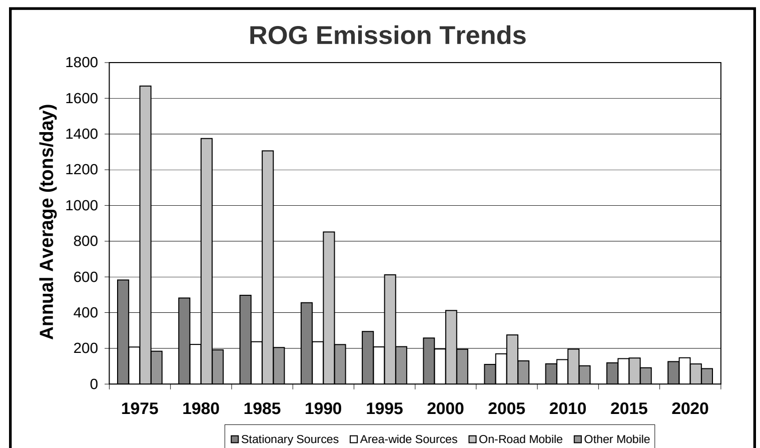

Figure 4-4

South Coast Air Basin

Ozone Air Quality Trend

Air quality as it relates to ozone in the South Coast Air Basin has improved substantially over the last 30 years. During the 1960s, maximum 1-hour concentrations were above 0.60 parts per million. Today, the maximum measured concentrations are less than one-third of that. All of the ozone statistics show an overall, steady decline. The 2004 ozone season in the South Coast was considerably better than the 2003 ozone season. The 2004 peak 8-hour indicator value is almost 43 percent lower than the 1985 value. The 2005 three-year average of the maximum 8-hour concentration is almost 41 percent lower than 1985. The number of days above the standards has declined dramatically. The downward trend for 8-hour ozone is similar to that for 1-hour.

The ARB has identified the South Coast Air Basin as a transport contributor to several downwind areas -- the Mojave Desert Air Basin, the Salton Sea Air Basin, the San Diego Air Basin, and the South Central Coast Air Basin. As ozone concentrations in the South Coast Air Basin decline further, the transport impact on the downwind areas should also decrease.

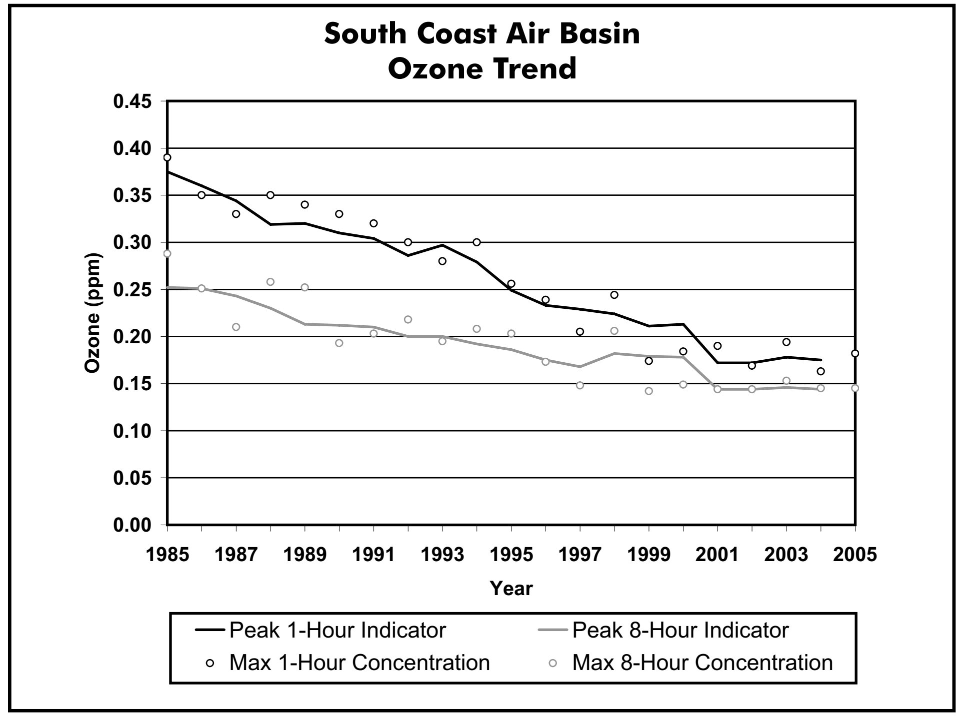

Figure 4-5

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005[1]
Peak 1-Hour Indicator	0.375	0.360	0.344	0.319	0.320	0.310	0.304	0.286	0.297	0.279	0.249	0.233	0.229	0.224	0.211	0.213	0.172	0.172	0.178	0.175	
Peak 8-Hour Indicator	0.252	0.251	0.243	0.230	0.213	0.212	0.210	0.200	0.200	0.192	0.186	0.175	0.168	0.182	0.179	0.178	0.144	0.144	0.146	0.144	
4th High 1-Hr. in 3 Yrs	0.360	0.350	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.231	0.215	0.217	0.211	0.211	0.170	0.169	0.180	0.171	
Avg. of 4th High 8-Hr. in 3 Yrs	0.226	0.222	0.217	0.205	0.192	0.186	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127	
Maximum 1-Hr. Concentration	0.390	0.350	0.330	0.350	0.340	0.330	0.320	0.300	0.280	0.300	0.256	0.239	0.205	0.244	0.174	0.184	0.190	0.169	0.194	0.163	0.182
Max. 8-Hr. Concentration	0.288	0.251	0.210	0.258	0.252	0.193	0.203	0.218	0.195	0.208	0.203	0.173	0.148	0.206	0.142	0.149	0.144	0.144	0.153	0.145	0.145
Days Above State Standard	207	217	196	216	211	185	184	190	185	165	153	141	144	107	111	115	121	116	125	105	97
Days Above Nat. 1-Hr. Std.	158	167	161	178	157	131	130	142	124	118	98	85	64	60	39	33	36	45	64	28	30
Days Above Nat. 8-Hr. Std.	181	191	179	194	181	161	160	173	161	148	120	115	118	93	93	94	92	96	109	88	84

[1] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2004 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-5

South Coast Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} have been increasing in the South Coast Air Basin since 1975. A decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia (secondary PM). The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 65 percent of the ambient PM_{10} in the South Coast Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***228***	***239***	***261***	***347***	***330***	***325***	***276***	***278***	***284***	***292***
Stationary Sources	56	40	28	27	19	18	16	16	17	17
Area-wide Sources	133	157	186	273	273	269	221	223	229	236
On-Road Mobile	15	17	24	22	19	19	19	19	20	20
Gasoline Vehicles	10	8	9	10	11	12	13	15	16	17
Diesel Vehicles	5	9	15	12	8	6	6	4	3	3
Other Mobile	25	24	23	24	19	20	21	20	19	19
Gasoline Fuel	3	3	3	4	4	4	5	5	6	6
Diesel Fuel	21	20	19	19	14	13	12	11	9	7
Other Fuel	1	1	1	1	2	2	3	4	5	5

Table 4-6

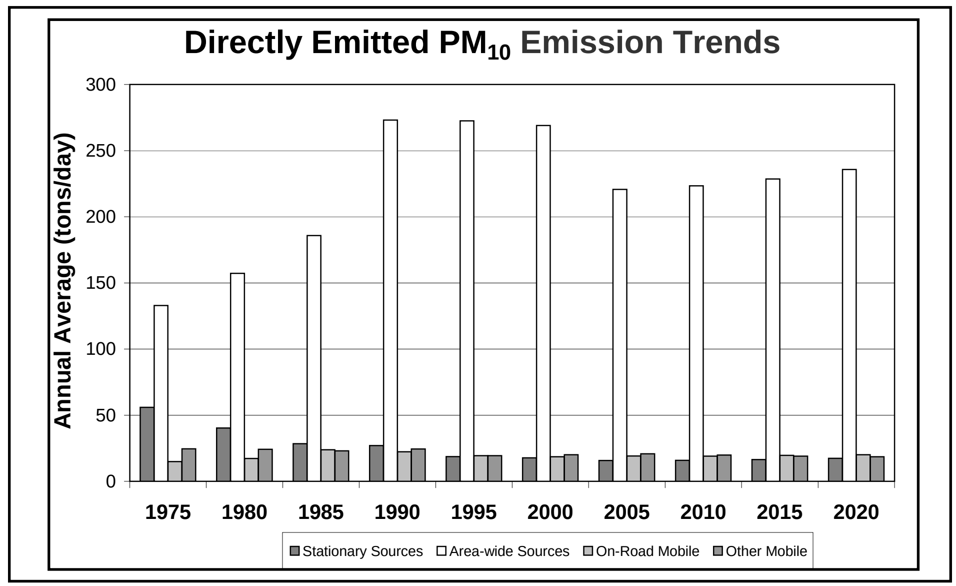

Figure 4-6

South Coast Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ have decreased slightly in the South Coast Air Basin since 1975. Stationary source emissions have been decreasing, while area-wide emissions have been increasing. A more significant decrease in emissions would have been observed, if not for growth in emissions from area-wide sources, primarily fugitive dust from paved and unpaved roads and other sources. The increase in activity of these area-wide sources reflects the increased growth and VMT in the air basin.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 40 percent of the ambient $PM_{2.5}$ in the South Coast Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***119***	***110***	***108***	***125***	***108***	***107***	***97***	***97***	***98***	***100***
Stationary Sources	52	34	22	23	15	15	13	13	13	14
Area-wide Sources	35	41	46	63	62	61	53	54	55	57
On-Road Mobile	11	13	19	17	14	13	13	13	13	13
Gasoline Vehicles	6	5	5	6	6	7	8	9	10	10
Diesel Vehicles	5	9	14	11	8	6	5	4	3	3
Other Mobile	22	22	21	22	17	18	18	18	17	16
Gasoline Fuel	2	2	2	3	3	3	4	4	4	5
Diesel Fuel	19	19	17	18	13	12	11	10	8	7
Other Fuel	1	1	1	1	2	2	3	4	4	5

Table 4-7

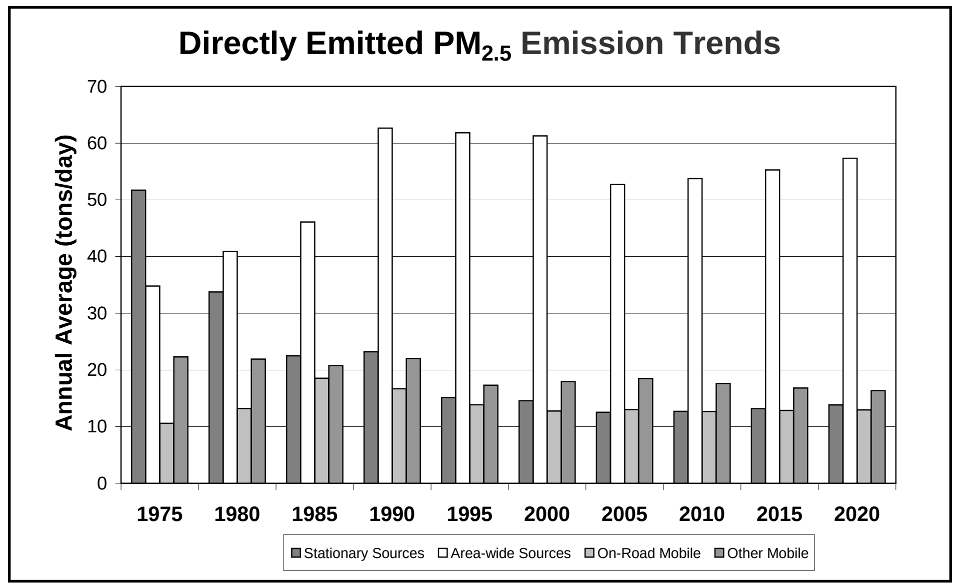

Figure 4-7

South Coast Air Basin

PM_{10} Air Quality Trend

As with other pollutants, the PM_{10} statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased about 34 percent. Although the values in the late 1990's show some variability, this is probably due to meteorology rather than a change in emissions. Despite the overall decrease, ambient concentrations still exceed the State annual and 24-hour PM_{10} standards. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM_{10} standards has also shown an overall drop. During 1988, there were 345 calculated days above the State standard and 44 calculated days above the national standard. By 2004, there were still 279 calculated State standard exceedance days. In contrast, there were no national standard exceedance days.

Despite these decreases, PM_{10} continues to pose a significant problem in the South Coast Air Basin. While emission controls implemented for ozone will also benefit PM_{10}, more controls aimed specifically at reducing PM_{10} will be needed to reach attainment.

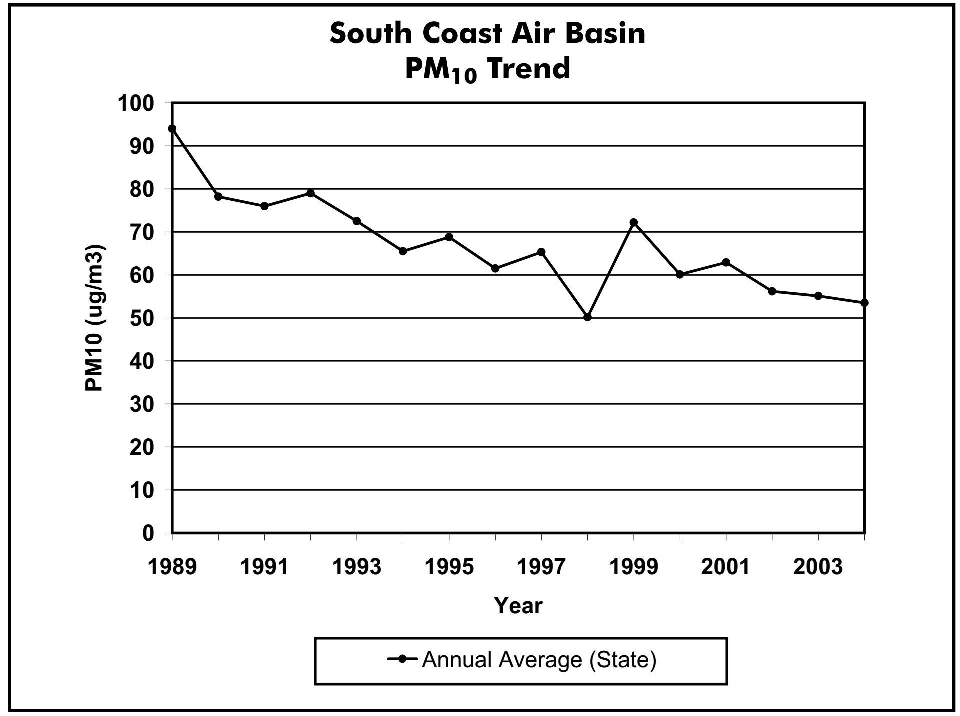

Figure 4-8

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				287	271	475	179	649	231	161	219	162	208	116	183	139	219	126	159	133
Max. 24-Hr. Concentration (Nat)				289	271	475	179	649	231	161	219	162	208	116	183	139	219	130	164	137
Annual Average (State)					94.0	78.2	76.0	79.0	72.5	65.5	68.8	61.5	65.3	50.2	72.2	60.1	62.9	56.2	55.1	53.5
Annual Average (Nat)				94.5	93.0	78.2	76.1	79.0	72.5	65.5	68.8	62.8	65.6	50.2	72.2	59.1	63.3	58.1	55.6	54.8
Calc Days Above State 24-Hr Std				345	338	301	294	282	293	276	252	276	290	238	288	300	278	297	252	279
Calc Days Above Nat 24-Hr Std				44	32	33	15	24	12	3	31	6	17	0	6	0	5	0	6	0

Table 4-8

South Coast Air Basin

$PM_{2.5}$ Air Quality Trend

Figure 4-8 shows the annual average $PM_{2.5}$ concentrations (national) in the South Coast Air Basin from 1999 through 2004. Overall, concentrations were relatively stable during the first three years. However, over the last three years the annual average concentrations have decreased. The State annual average concentrations also show a declining trend, although the trend looks less pronounced, due to differences in State and national monitoring methods. The 98th percentile of 24 hour $PM_{2.5}$ concentrations has also declined within the last six years. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. The South Coast Air Basin is currently designated as nonattainment for the national $PM_{2.5}$ standards. Measures adopted as part of the upcoming $PM_{2.5}$ State Implementation Plan, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

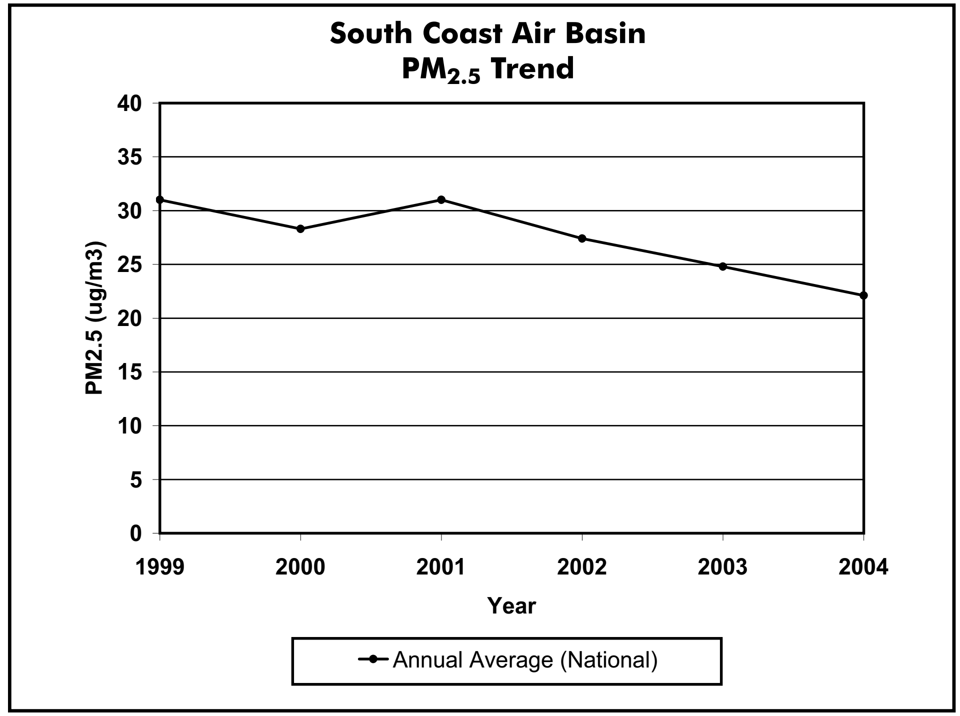

Figure 4-9

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															121.4	119.6	104	82.1	121.2	93.8
Max. 24-Hr. Concentration (Nat)															121.4	119.6	98.0	82.1	121.2	93.8
98th Percentile of 24-Hr Conc.															85.6	83.0	74.3	66.3	76.6	72.4
Annual Average (State)																24.0	25.0	25.8	24.8	16.6
Avg. of Qtrly. Means (Nat)															31.0	28.3	31.0	27.4	24.8	22.1

Table 4-9

South Coast Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been trending downward since 1975 in the South Coast Air Basin even though motor vehicle miles traveled have increased and industrial activity has grown. On-road motor vehicle controls are primarily responsible for this decline in emissions of CO. Stationary source emissions decreased during the 1970s and 1980s as a result of a decline in the manufacture of carbon black (a material used in the manufacture of tires) and steel in the South Coast Air Basin. CO emissions from other mobile sources are projected to decrease as more stringent emission standards are adopted.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***16137***	***13368***	***13099***	***10309***	***7547***	***5451***	***3838***	***2943***	***2395***	***2056***
Stationary Sources	291	280	69	95	62	48	65	66	68	69
Area-wide Sources	39	44	48	56	57	60	64	68	73	78
On-Road Mobile	14571	11754	11622	8690	6153	4207	2705	1883	1334	956
Gasoline Vehicles	14546	11708	11545	8623	6093	4154	2654	1839	1295	920
Diesel Vehicles	25	47	78	67	60	52	51	44	39	36
Other Mobile	1236	1290	1360	1468	1274	1136	1004	926	921	953
Gasoline Fuel	1027	1076	1156	1251	1080	952	823	743	735	761
Diesel Fuel	119	121	119	122	96	85	76	72	69	68
Other Fuel	91	92	86	96	98	98	105	111	117	124

Table 4-10

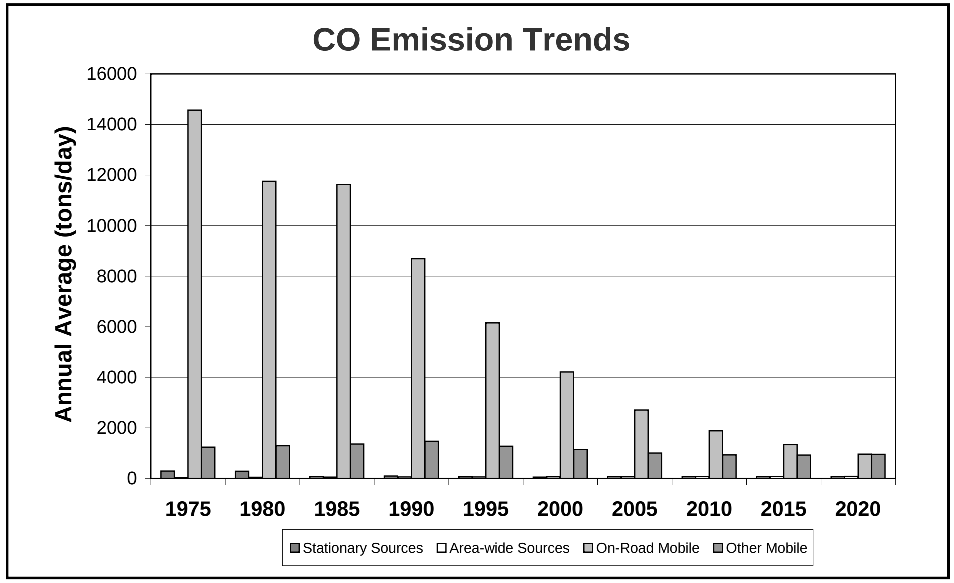

Figure 4-10

South Coast Air Basin

Carbon Monoxide Air Quality Trend

Carbon monoxide concentrations in the South Coast Air Basin have decreased markedly -- a total decrease of more than 60 percent in the maximum peak 8-hour indicator since 1985. The number of exceedance days has also declined. There were 64 days above the State standard and 54 days above the national standard during 1985. However, during 2004, there were no exceedance days for either standard.

The entire South Coast Air Basin is designated as nonattainment for the national CO standards, however, CO violations that have occurred have been limited to a small portion of Los Angeles County. The South Coast Air Basin now qualifies as attainment for the national standard. No violations have occurred in the other three counties since 1992. Continuing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations.

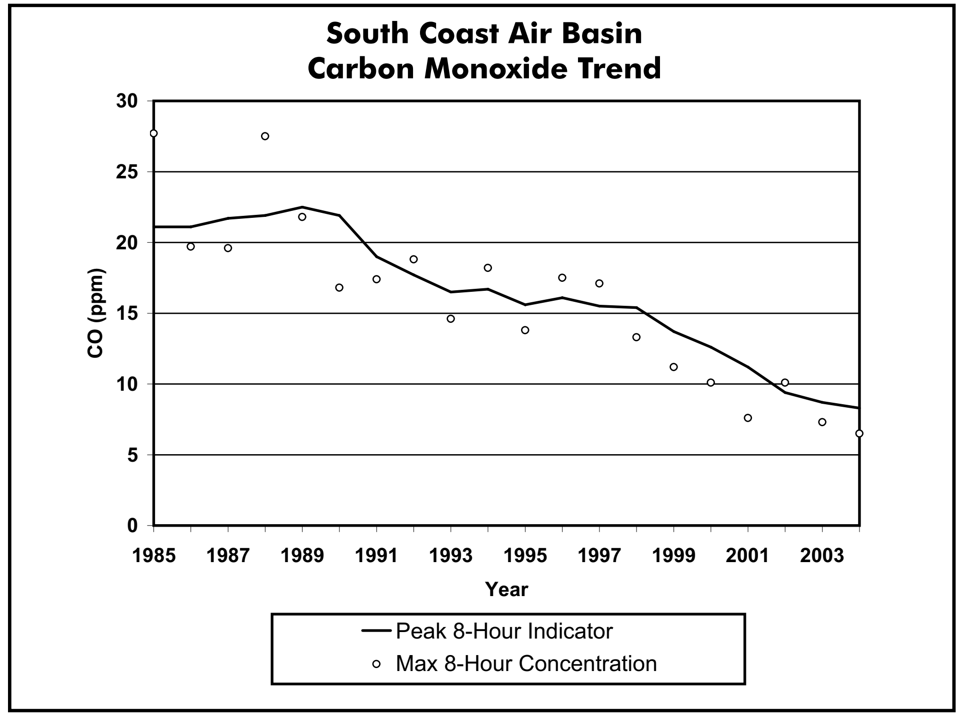

Figure 4-11

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	21.1	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3
Max. 1-Hr. Concentration	33.0	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.8	11.7	15.8	12.2	10.4
Max. 8-Hr. Concentration	27.7	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5
Days Above State 8-Hr. Std.	64	58	50	73	71	50	51	39	29	27	17	26	18	13	11	6	0	1	0	0
Days Above Nat. 8-Hr. Std.	54	49	40	65	67	42	41	34	19	19	14	19	13	10	7	3	0	1	0	0

Table 4-11

South Coast Air Basin

Nitrogen Dioxide

Oxides of Nitrogen Emission Trends and Forecasts

Oxides of nitrogen (NO_x) and nitrogen dioxide (NO_2) emissions in the South Coast Air Basin have been trending downward since 1985. This decline should continue as more stringent motor vehicle and stationary source emission standards are adopted and implemented.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1712***	***1600***	***1694***	***1553***	***1315***	***1183***	***957***	***756***	***586***	***496***
Stationary Sources	304	263	227	169	120	104	58	57	56	56
Area-wide Sources	31	34	34	28	26	26	28	22	21	22
On-Road Mobile	1026	954	1094	1000	869	751	581	426	282	196
Gasoline Vehicles	921	768	788	700	594	432	270	186	129	92
Diesel Vehicles	105	186	306	299	275	319	311	239	153	103
Other Mobile	351	349	339	356	300	301	290	250	227	223
Gasoline Fuel	20	21	22	24	22	25	26	22	19	19
Diesel Fuel	303	301	287	291	233	229	202	160	132	118
Other Fuel	28	28	29	40	45	48	62	68	76	86

Table 4-12

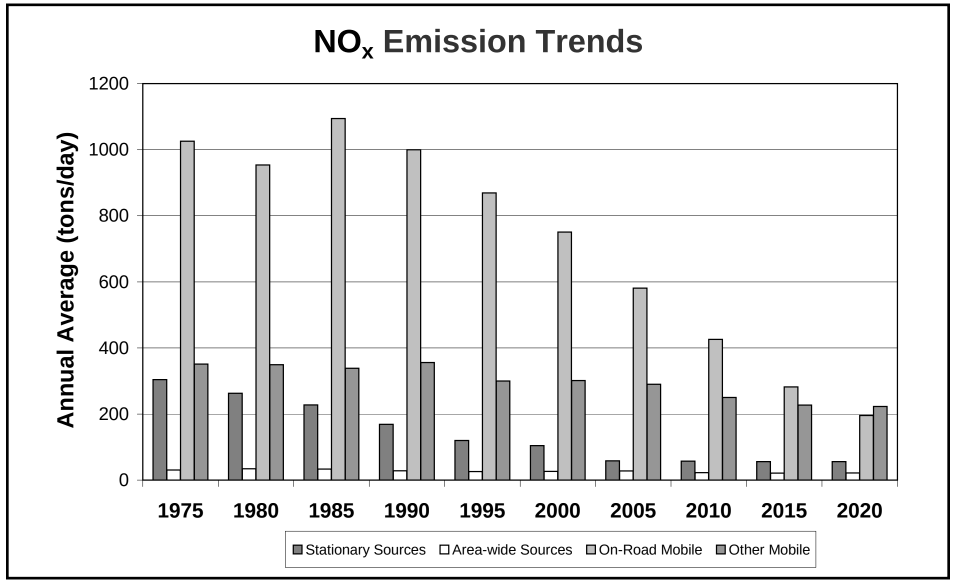

Figure 4-12

South Coast Air Basin

Nitrogen Dioxide Air Quality Trend

The South Coast Air Basin is one of only a few areas in California where nitrogen dioxide (NO_2) has been a problem. The South Coast Air Basin attained the State 1-hour NO_2 standard in 1994, bringing the entire State into attainment. The federal standard has not been exceeded since 1991.

Over the last 20 years, NO_2 values have decreased significantly in the South Coast Air Basin. The peak 1-hour indicator for 2004 was half of what it was during 1985. However, since the early 1990's, maximum 1-hour NO_2 concentrations that exceed the level of the State standard have occasionally occurred but have not affected the area's attainment status. These exceedances have been very infrequent and limited to either the Banning Airport or the Burbank-West Palm Avenue monitoring sites. Additional years of data will be needed to determine if there is any long-term change in NO_2 trends in the South Coast Air Basin.

Nitrogen dioxide is formed from emissions of oxides of nitrogen, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's oxides of nitrogen emissions.

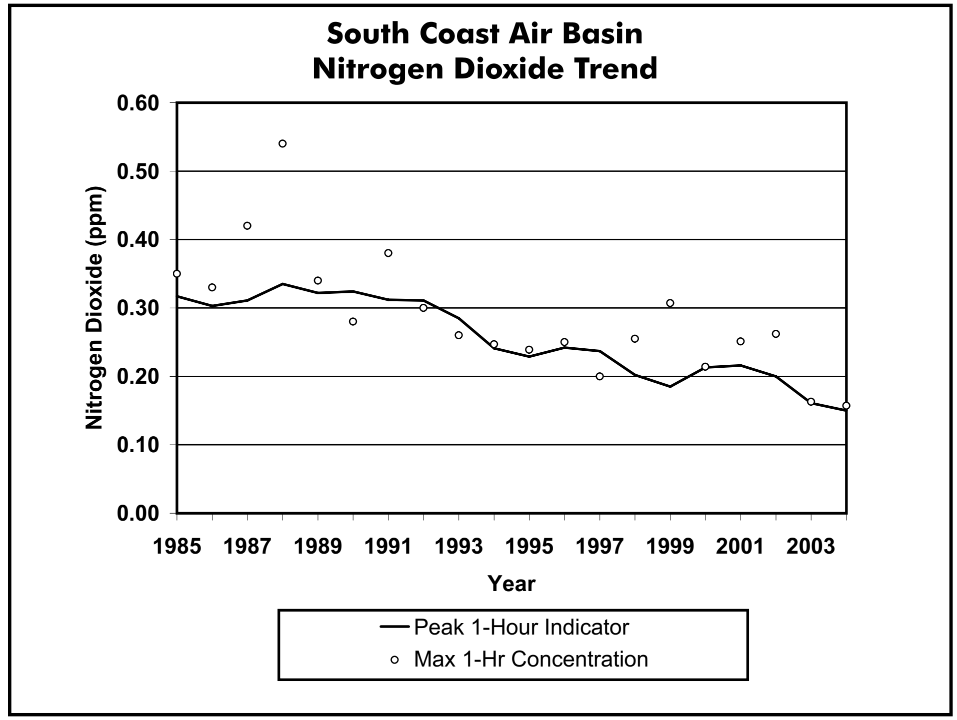

Figure 4-13

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.317	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.185	0.213	0.216	0.200	0.161	0.150
Max. 1-Hr. Concentration	0.350	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.255	0.307	0.214	0.251	0.262	0.163	0.157
Max. Annual Average	0.060	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033

Table 4-13

San Francisco Bay Area Air Basin

Introduction - Area Description

The San Francisco Bay Area is California's second largest metropolitan area and is the focal point of northern California. The nine county area comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern half of Sonoma County, and the southwestern portion of Solano County. The unifying feature of the area is the Bay itself, which is oriented north-south and covers about 400 square miles of the area's total 5,340 square miles.

Over 19 percent of California's population resides in the San Francisco Bay Area, and pollution sources in the region account for about 16 percent of the total statewide criteria pollutant emissions. The climate in the San Francisco Bay Area varies from one location to the next. Along the coast, temperatures are mild year-round. However, as one moves inland, temperatures show larger diurnal and seasonal variations. Overall air quality in the San Francisco Bay Area Air Basin is better than in the South Coast Air Basin. This is due to a more favorable climate, with cooler temperatures and better ventilation. However, exceedances of the ozone standards continue to occur in the San Francisco Bay Area Air Basin, and still pose challenges to State and local air pollution control agencies.

Figure 4-14

San Francisco Bay Area Air Basin

Emission Trends and Forecasts

The emission levels for the ozone precursors NO_x and ROG have been trending downward in the San Francisco Bay Area Air Basin since 1975. CO emissions have also been trending downward since 1975. On-road motor vehicles are the largest contributors to CO, ROG, and NO_x emissions in the air basin. The implementation of stricter mobile source (both on-road and other) emission standards will continue to decrease vehicle emissions in this air basin. Controls on stationary source solvent evaporation and fugitive emissions will also continue to reduce ROG emissions.

San Francisco Bay Area Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_X	979	972	909	878	765	658	547	465	389	352
ROG	1366	1278	1029	756	631	513	387	337	307	292
PM_{10}	178	179	193	192	189	219	213	226	238	251
PM_{25}	87	85	87	88	86	93	91	94	99	103
CO	8846	8200	6997	5190	3814	2799	2213	1792	1456	1257

Table 4-14

San Francisco Bay Area Air Basin

Population and VMT

Compared with the statewide totals, population and the number of vehicle miles traveled each day are projected to grow at a slower rate in the San Francisco Bay Area Air Basin from 1980 to 2020. During that 40-year period, the population is projected to increase about 57 percent, from about 5.1 million in 1980 to more than eight million in 2020. During the same period, the daily VMT is projected to increase 136 percent, from 90 million miles per day in 1980 to over 213 million miles per day in 2020. While these growth rates are lower than the growth rates seen in other areas, they still represent substantial increases.

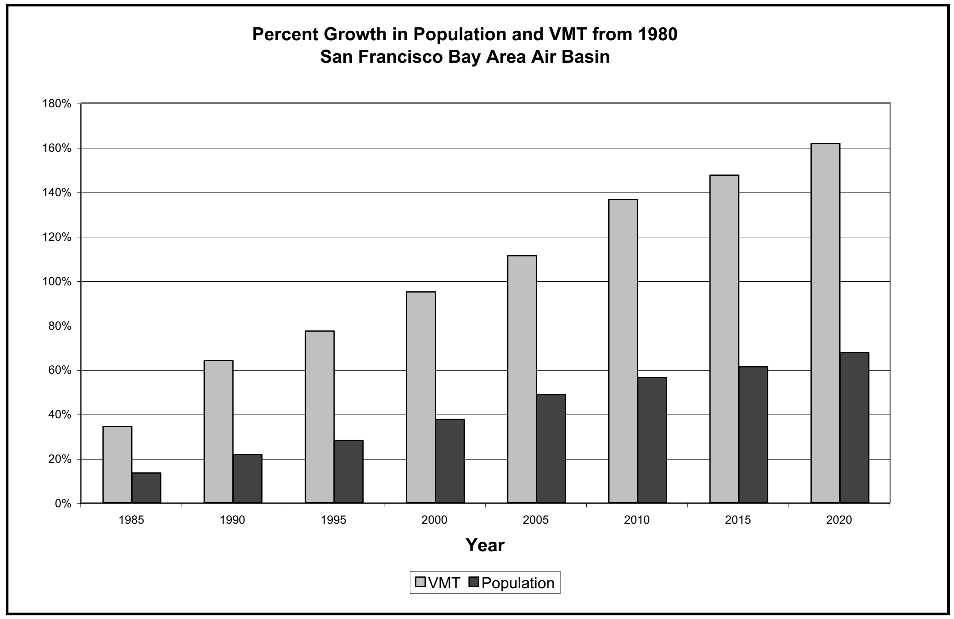

Figure 4-15

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	5095406	5473956	5874353	6182467	6646727	6953438	7337485	7736635	8135781
Avg. Daily VMT/1000	90066	109789	133990	144854	159271	172581	193300	202212	213900

Table 4-15

San Francisco Bay Area Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of ozone precursors have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO_x and ROG. Stationary source emissions of ROG have declined over the last 20 years due to new controls for oil refinery fugitive emissions and new rules for control of ROG from various industrial coatings and solvent operations.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***979***	***972***	***909***	***878***	***765***	***658***	***547***	***465***	***389***	***352***
Stationary Sources	235	212	141	131	114	90	55	57	59	61
Area-wide Sources	13	14	15	19	20	20	20	20	21	21
On-Road Mobile	552	570	566	524	437	352	286	217	146	101
Gasoline Vehicles	497	478	417	348	294	208	155	114	78	54
Diesel Vehicles	55	92	149	176	142	144	131	103	68	47
Other Mobile	178	175	187	203	195	196	186	171	163	169
Gasoline Fuel	8	8	9	11	12	13	13	10	10	10
Diesel Fuel	146	142	151	161	148	144	131	110	96	91
Other Fuel	24	26	28	32	35	40	43	50	58	68

Table 4-16

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1366***	***1278***	***1029***	***756***	***631***	***513***	***387***	***337***	***307***	***292***
Stationary Sources	301	261	169	117	121	115	78	79	82	85
Area-wide Sources	115	115	112	117	103	97	92	95	98	101
On-Road Mobile	865	815	652	417	307	207	152	113	80	60
Gasoline Vehicles	862	809	643	409	300	201	146	108	76	57
Diesel Vehicles	3	5	8	8	6	6	6	5	4	3
Other Mobile	85	88	96	105	101	94	64	51	48	46
Gasoline Fuel	61	63	70	77	76	71	43	32	29	27
Diesel Fuel	14	13	14	15	15	14	13	10	9	8
Other Fuel	10	11	12	13	11	9	8	9	10	11

Table 4-17

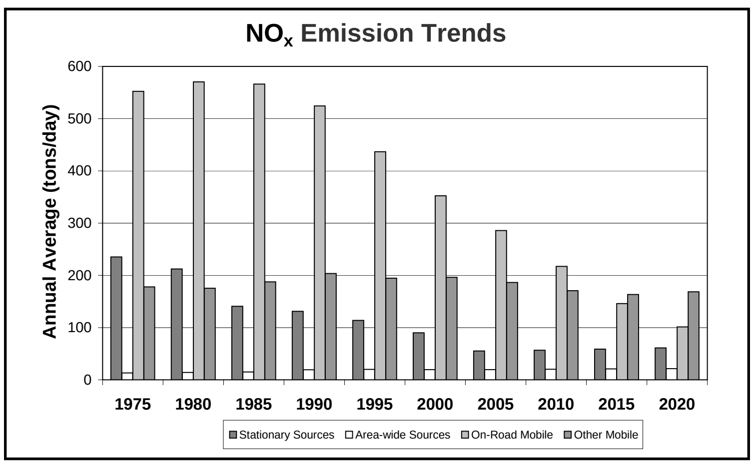

Figure 4-16

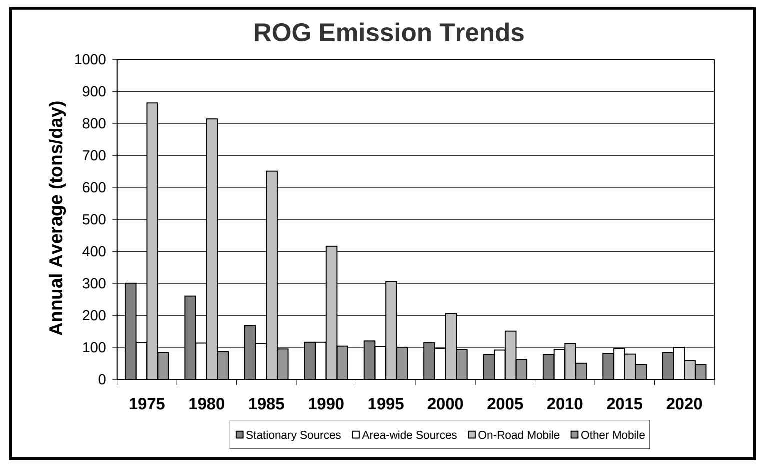

Figure 4-17

San Francisco Bay Area Air Basin

Ozone Air Quality Trend

Ozone concentrations in the San Francisco Bay Area are much lower than in the South Coast and San Joaquin Valley Air Basins. The peak 1-hour and 8-hour indicators have declined by 26 percent during the last 20 years. The number of days when State and federal standards are exceeded show a similar trend. Another indication of progress is that the Bay Area may soon qualify for attainment of the federal 8-hour ozone standard, although they still exceed the more stringent State 1-hour and 8-hour standards. Although the long-term trends indicate improving air quality, since 1994 the peak indicators show some elevated values. However, it is not yet clear whether these data represent a significant change in the overall trend.

Meteorology can cause ozone and ozone precursor emissions to be transported from one air basin to another. The ARB has identified the San Francisco Bay Area Air Basin as a transport contributor to the following six areas: the Sacramento region, the Mountain Counties Air Basin, the North Central Coast Air Basin, the North Coast Air Basin, the San Joaquin Valley Air Basin, and the South Central Coast Air Basin. The amount of transport impact varies from day to day, depending in large part on meteorology. To the extent that the Bay Area continues to reduce ozone precursor emissions, the transport impact on downwind areas should also decrease.

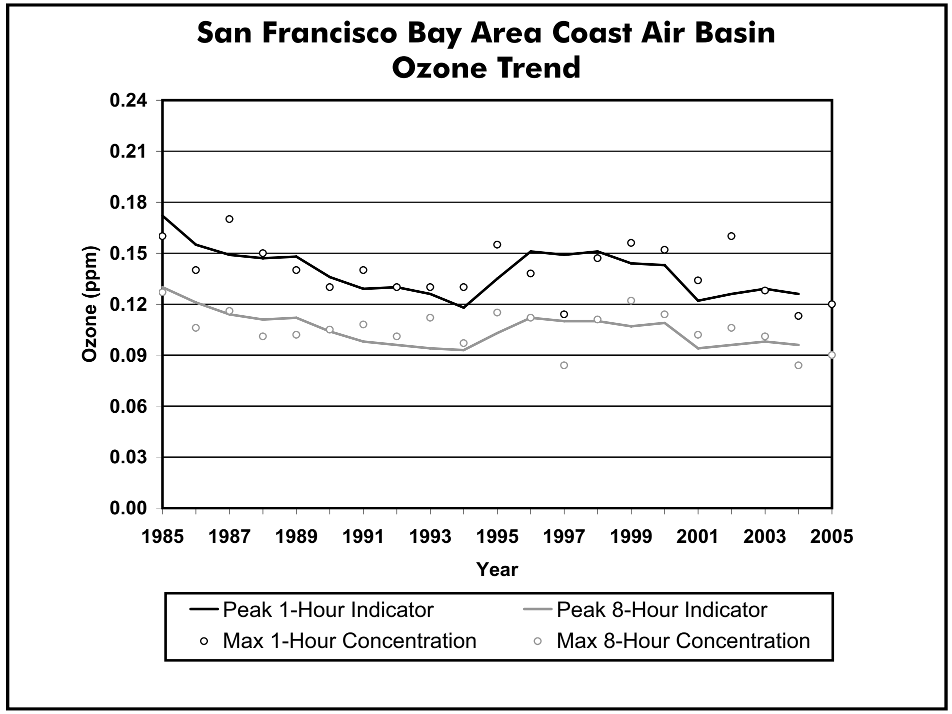

Figure 4-18

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005[1]
Peak 1-Hour Indicator	0.172	0.155	0.149	0.147	0.148	0.136	0.129	0.130	0.126	0.118	0.135	0.151	0.149	0.151	0.144	0.143	0.122	0.126	0.129	0.126	
Peak 8-Hour Indicator	0.130	0.121	0.114	0.111	0.112	0.104	0.098	0.096	0.094	0.093	0.103	0.112	0.110	0.110	0.107	0.109	0.094	0.096	0.098	0.096	
4th High 1-Hr. in 3 Yrs	0.160	0.150	0.140	0.140	0.140	0.130	0.130	0.120	0.120	0.121	0.138	0.138	0.138	0.138	0.139	0.139	0.126	0.124	0.123	0.123	
Avg. of 4th High 8-Hr. in 3 Yrs	0.103	0.097	0.092	0.092	0.097	0.088	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.082	0.082	0.086	0.084	
Maximum 1-Hr. Concentration	0.160	0.140	0.170	0.150	0.140	0.130	0.140	0.130	0.130	0.130	0.155	0.138	0.114	0.147	0.156	0.152	0.134	0.160	0.128	0.113	0.120
Max. 8-Hr. Concentration	0.127	0.106	0.116	0.101	0.102	0.105	0.108	0.101	0.112	0.097	0.115	0.112	0.084	0.111	0.122	0.114	0.102	0.106	0.101	0.084	0.090
Days Above State Standard	45	39	46	41	22	14	23	23	19	13	28	34	8	29	20	12	15	16	19	7	9
Days Above Nat. 1-Hr. Std.	9	5	14	5	4	2	2	2	3	2	11	8	0	8	3	3	1	2	1	0	0
Days Above Nat. 8-Hr. Std.	17	13	29	20	13	7	6	6	5	4	18	14	0	16	9	4	7	7	7	0	1

[1] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2004 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-18

San Francisco Bay Area Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} increased in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Emissions of directly emitted PM_{10} from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the San Francisco Bay Area Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***178***	***179***	***193***	***192***	***189***	***219***	***213***	***226***	***238***	***251***
Stationary Sources	39	28	24	21	23	21	17	18	18	19
Area-wide Sources	118	129	144	143	144	177	175	187	199	210
On-Road Mobile	7	9	12	12	9	9	10	10	10	11
Gasoline Vehicles	5	4	4	5	5	6	7	8	9	9
Diesel Vehicles	2	5	7	7	4	3	3	2	2	1
Other Mobile	14	14	14	16	13	12	12	11	11	11
Gasoline Fuel	1	1	1	1	2	2	2	2	3	3
Diesel Fuel	10	9	10	11	9	9	8	7	6	5
Other Fuel	3	3	3	4	3	2	2	2	2	3

Table 4-19

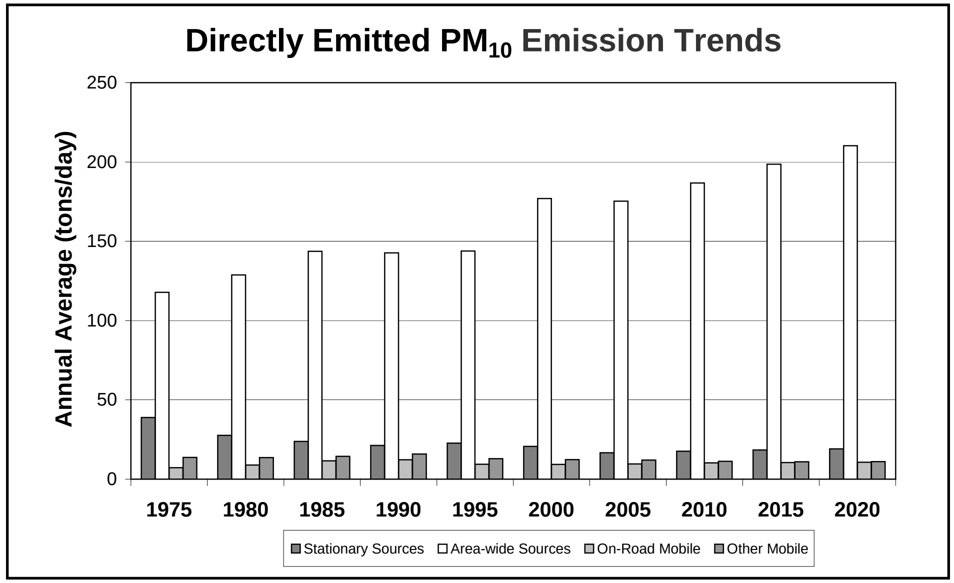

Figure 4-19

San Francisco Bay Area Air Basin

Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ remained relatively constant in the San Francisco Bay Area Air Basin between 1975 and 2005 and are projected to increase slightly through 2020. Emissions from stationary sources declined slightly, while area-wide sources increased. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Emissions of directly emitted $PM_{2.5}$ from diesel motor vehicles have been decreasing since 1990 even though population and VMT are growing, due to adoption of more stringent emission standards.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 60 percent of the ambient $PM_{2.5}$ in the San Francisco Bay Area Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***87***	***85***	***87***	***88***	***86***	***93***	***91***	***94***	***99***	***103***
Stationary Sources	28	22	16	14	16	16	13	14	14	15
Area-wide Sources	41	44	48	50	52	59	60	64	67	71
On-Road Mobile	5	7	9	9	7	6	7	7	7	7
Gasoline Vehicles	3	3	2	3	3	3	4	5	5	6
Diesel Vehicles	2	4	7	7	4	3	3	2	2	1
Other Mobile	13	13	13	15	12	11	11	10	10	10
Gasoline Fuel	1	1	1	1	1	1	2	2	2	2
Diesel Fuel	9	9	9	10	8	8	8	6	6	5
Other Fuel	3	3	3	4	3	2	2	2	2	3

Table 4-20

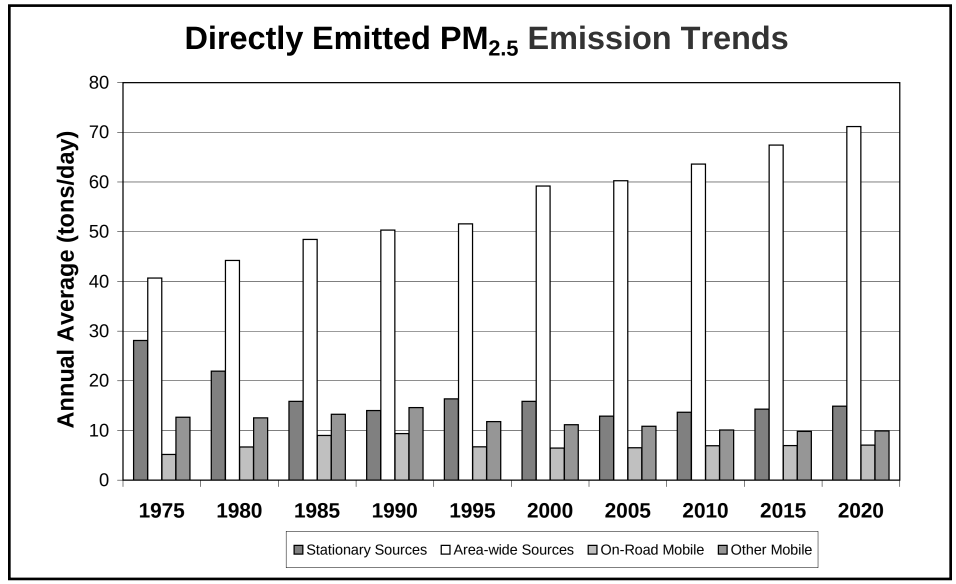

Figure 4-20

San Francisco Bay Area Air Basin

PM_{10} Air Quality Trend

As with other pollutants, the PM_{10} statistics also show overall improvement. During the period for which data are available, the three-year average of the annual average (State) decreased by more than 30 percent.

Calculated exceedance days for the State 24-hour standard dropped from a high of 123 days during 1988 to 36 days during 2004. The national 24-hour standard was last exceeded in 1991. Because many of the same sources contribute to both ozone and PM_{10}, future ozone precursor emission controls should help ensure continued PM_{10} improvements.

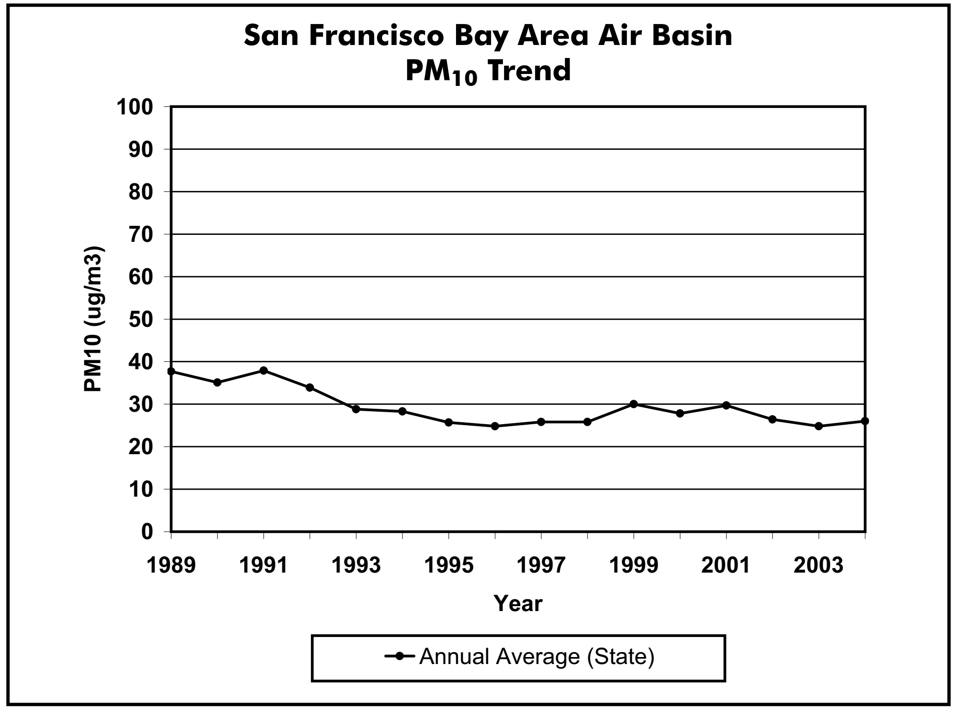

Figure 4-21

PM_{10} (ug/m3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				146	147	165	155	112	93	97	74	76	85	100	117	80	114	84	60	65
Max. 24-Hr. Concentration (Nat)				146	150	173	155	112	101	97	74	76	95	92	114	76	109	80	58	63
Annual Average (State)					37.7	35.1	37.9	33.9	28.8	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7	26.4	24.8	26.0
Annual Average (Nat)				38.3	40.8	40.4	38.3	33.7	28.8	28.3	25.7	24.9	25.8	25.1	28.7	26.8	28.9	25.4	24.2	25.3
Calc Days Above State 24-Hr Std				123	137	93	125	108	59	54	42	18	20	25	63	42	51	30	30	36
Calc Days Above Nat 24-Hr Std				0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-21

San Francisco Bay Area Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average $PM_{2.5}$ concentrations (national) in the San Francisco Bay Area decreased slightly in the last five years. The State annual average concentration trend however, remained relatively constant, due to differences in State and national monitoring methods. However, the national annual statistics show a slight downward trend. The 98^{th} percentile of 24-hour $PM_{2.5}$ concentrations also declined during this five-year period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

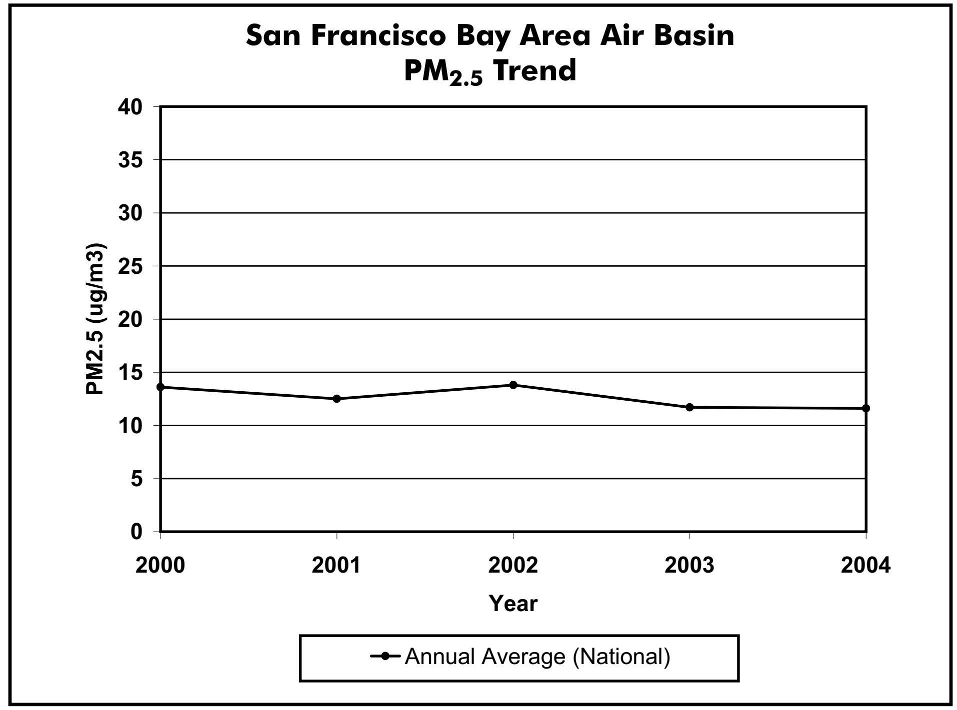

Figure 4-22

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															90.5	67.2	107.5	84.5	56.1	73.7
Max. 24-Hr. Concentration (Nat)															90.5	67.2	107.5	76.7	56.1	73.7
98th Percentile of 24-Hr Conc.																55.3	56.0	57.5	37.4	39.8
Annual Average (State)																11.6	12.5	13.8	11.7	11.6
Avg. of Qtrly. Means (Nat)																13.6	12.5	13.8	11.7	11.6

Table 4-22

San Francisco Bay Area Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO have been declining in the San Francisco Bay Area Air Basin since 1975. Motor vehicles and other mobile sources are the largest sources of CO emissions in the air basin. Emissions from motor vehicles have been declining, with the introduction of new automotive emission controls, despite increases in VMT. Oil refineries, manufacturing, and electric generation contribute a significant portion of the stationary source CO emissions. Area-wide CO emissions are primarily from residential fuel combustion (including wood), waste burning, and fires.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***8846***	***8200***	***6997***	***5190***	***3814***	***2799***	***2213***	***1792***	***1456***	***1257***
Stationary Sources	53	62	80	72	69	57	53	54	57	59
Area-wide Sources	127	136	144	160	163	169	178	182	188	194
On-Road Mobile	8155	7477	6190	4310	2965	2029	1496	1105	752	522
Gasoline Vehicles	8142	7454	6152	4270	2934	2001	1470	1082	733	505
Diesel Vehicles	13	23	38	39	31	27	26	23	19	17
Other Mobile	511	525	582	648	618	544	486	450	459	481
Gasoline Fuel	402	413	461	518	495	431	376	333	333	345
Diesel Fuel	56	56	63	69	62	55	49	46	47	48
Other Fuel	52	55	58	61	61	59	61	71	79	88

Table 4-23

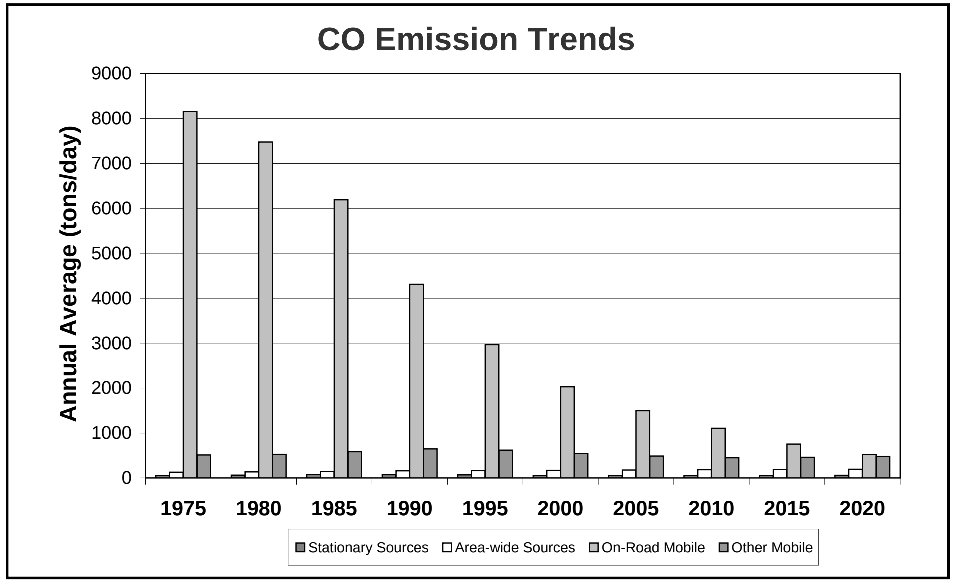

Figure 4-23

San Francisco Bay Area Air Basin

Carbon Monoxide Air Quality Trend

As in other areas of the State, carbon monoxide concentrations in the San Francisco Bay Area Air Basin have declined substantially over the last 20 years. The peak 8-hour indicator value during 2004 is 30 percent of what it was during 1985 and is now well below the level of the standards. In fact, neither the State nor the national standards have been exceeded in this area since 1991.

Much of the decline in ambient carbon monoxide concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles. The San Francisco Bay Area Air Basin is currently designated as attainment for both the State and national CO standards. Based on emission projections, the area is expected to maintain its attainment status in the coming years.

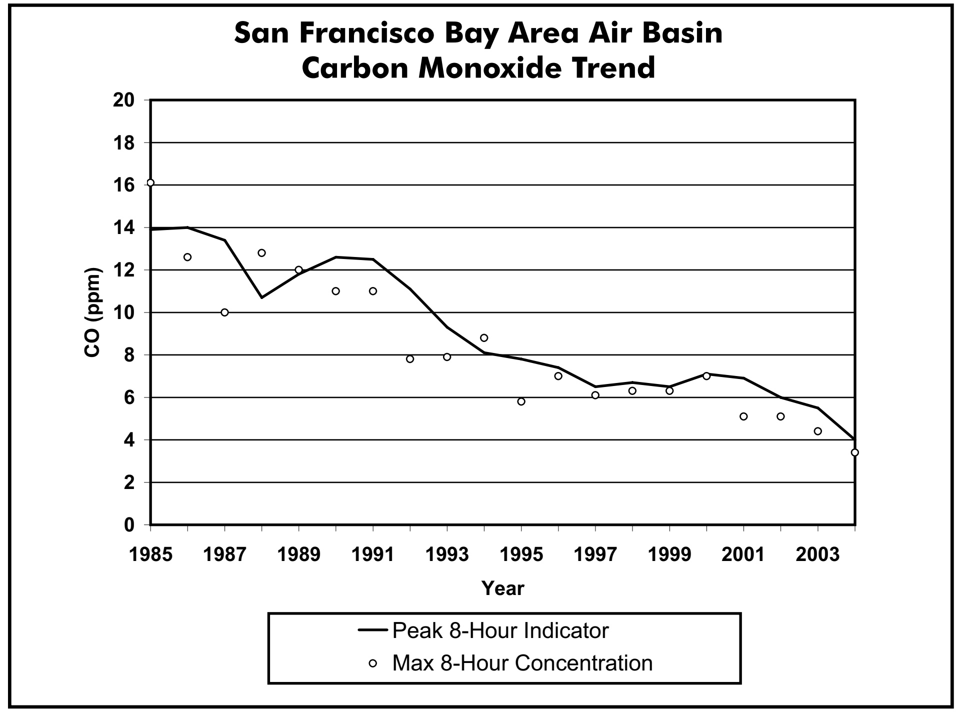

Figure 4-24

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.9	14.0	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	5.5	4.0
Max. 1-Hr. Concentration	21.0	20.0	17.0	15.0	19.0	18.0	15.0	12.0	14.0	12.0	10.1	8.8	10.7	8.7	9.0	9.8	7.6	7.7	8.6	4.8
Max. 8-Hr. Concentration	16.1	12.6	10.0	12.8	12.0	11.0	11.0	7.8	7.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	5.1	4.4	3.4
Days Above State 8-Hr. Std.	24	8	2	4	10	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	21	8	1	4	9	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-24

San Francisco Bay Area Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x and NO_2 have decreased in the San Francisco Bay Area Air Basin since 1975 and are projected to continue declining through 2020. The Bay Area has a significant motor vehicle population, and the implementation of stricter motor vehicle controls has resulted in significant emissions reductions for NO_x.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***979***	***972***	***909***	***878***	***765***	***658***	***547***	***465***	***389***	***352***
Stationary Sources	235	212	141	131	114	90	55	57	59	61
Area-wide Sources	13	14	15	19	20	20	20	20	21	21
On-Road Mobile	552	570	566	524	437	352	286	217	146	101
Gasoline Vehicles	497	478	417	348	294	208	155	114	78	54
Diesel Vehicles	55	92	149	176	142	144	131	103	68	47
Other Mobile	178	175	187	203	195	196	186	171	163	169
Gasoline Fuel	8	8	9	11	12	13	13	10	10	10
Diesel Fuel	146	142	151	161	148	144	131	110	96	91
Other Fuel	24	26	28	32	35	40	43	50	58	68

Table 4-25

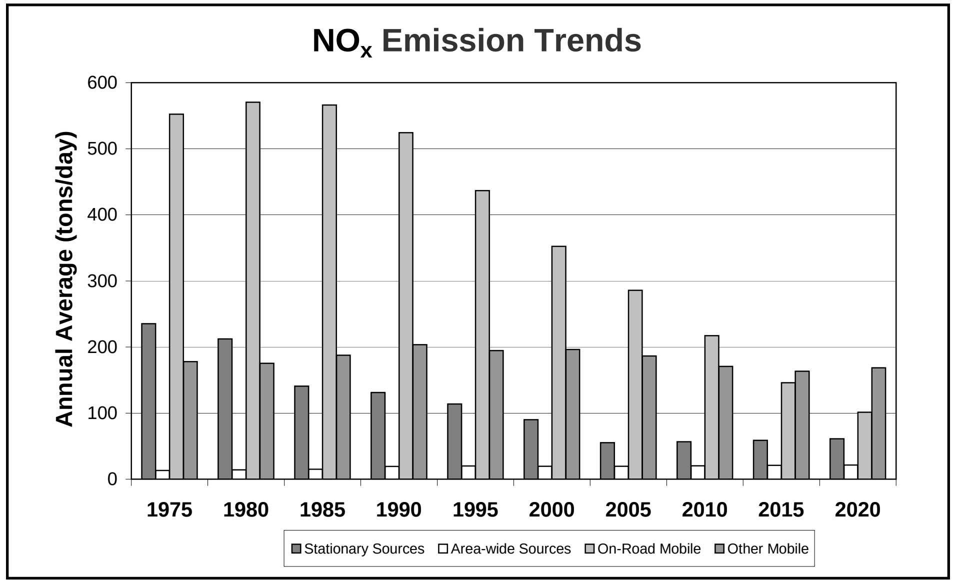

Figure 4-25

San Francisco Bay Area Air Basin

Nitrogen Dioxide Air Quality Trend

The San Francisco Bay Area has attained both the State and national nitrogen dioxide standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. The peak 1-hour indicator has declined by almost 60 percent in the San Francisco Bay Area since 1985. This downward trend is expected to continue.

Nitrogen dioxide is formed from emissions of oxides of nitrogen, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's oxides of nitrogen emissions.

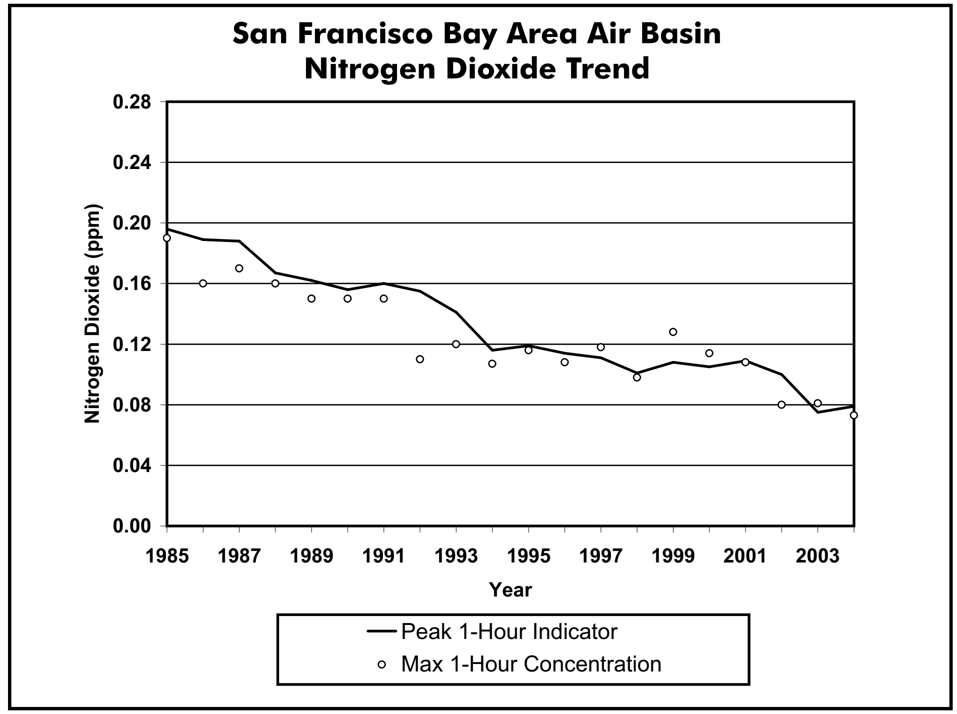

Figure 4-26

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.196	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100	0.075	0.079
Max. 1-Hr. Concentration	0.190	0.160	0.170	0.160	0.150	0.150	0.150	0.110	0.120	0.107	0.116	0.108	0.118	0.098	0.128	0.114	0.108	0.080	0.081	0.073
Max. Annual Average	0.035	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024	0.019	0.018	0.017

Table 4-26

San Joaquin Valley Air Basin

Introduction - Area Description

The San Joaquin Valley Air Basin occupies the southern two-thirds of California's Central Valley. The eight-county area comprises Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties and the western portion of Kern County. The Valley covers nearly 23,490 square miles. With very few exceptions, the San Joaquin Valley is flat and unbroken, with most of the area lying below 1,000 feet in elevation and most of the population living below 500 feet. The Valley floor slopes downward from east to west, and the San Joaquin River winds its way along the western side from south to north.

Similar to other inland areas, the San Joaquin Valley has cool wet winters and hot dry summers. Generally, the temperature increases and rainfall decreases from north to south.

In contrast to other California areas, air quality in the San Joaquin Valley is not dominated by emissions from one large urban area. Instead, there are a number of moderately sized urban areas spread along the main axis of the Valley. This wide distribution of emissions complicates the challenge faced by air quality control agencies. Overall, about 10 percent of California's population lives in the San Joaquin Valley, and pollution sources in the region account for about 14 percent of the total statewide criteria pollutant emissions.

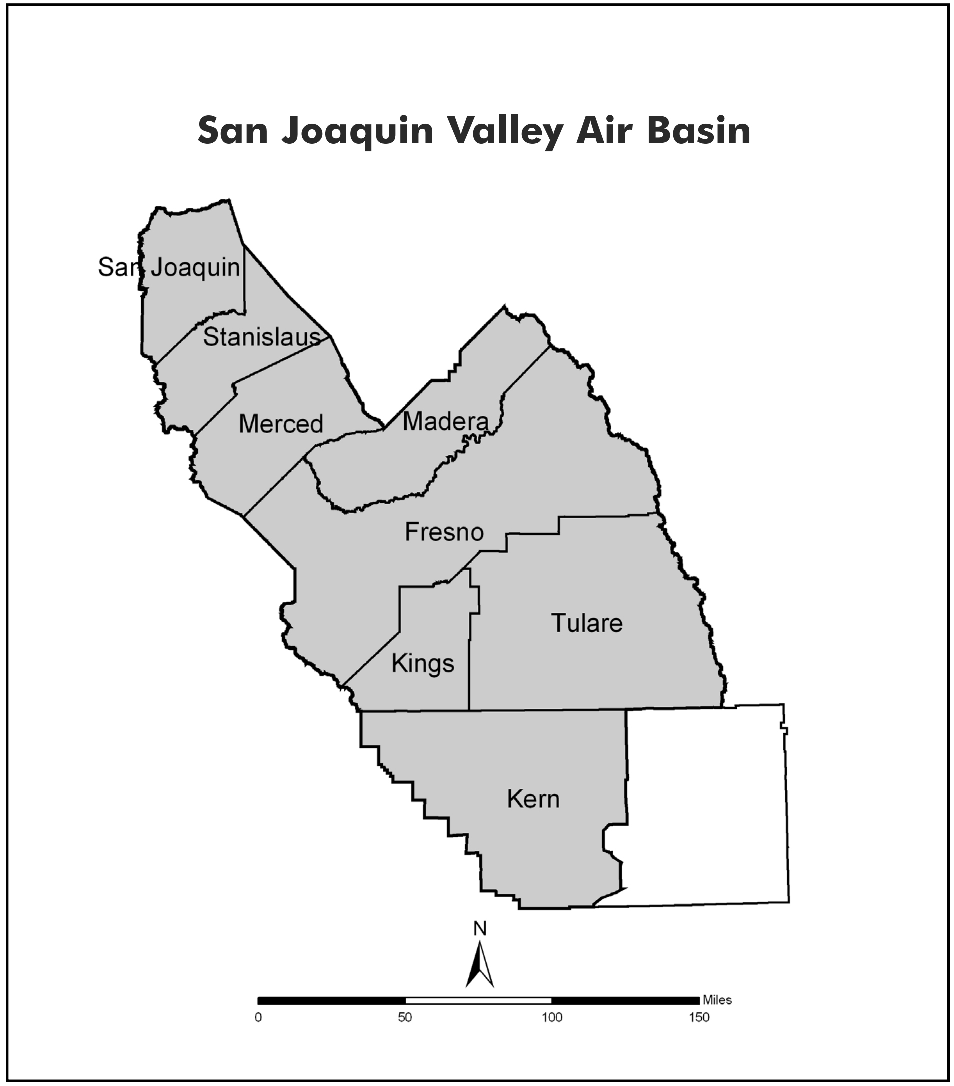

Figure 4-27

San Joaquin Valley Air Basin

Emission Trends and Forecasts

With the exception of PM_{10}, the emission levels in the San Joaquin Valley Air Basin have been decreasing since 1990. The decreases are predominantly due to motor vehicle controls and reductions in evaporative and fugitive emissions. On-road motor vehicles are the largest contributors to CO emissions in the San Joaquin Valley. On-road motor vehicles, other mobile sources, and stationary sources are all significant contributors to NO_x emissions. A significant portion of the stationary source ROG emissions is fugitive emissions from the extensive oil and gas production operations in the lower San Joaquin Valley. PM_{10} emissions are mostly fugitive dust from paved and unpaved roads, agricultural operations, and waste burning.

San Joaquin Valley Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_X	658	810	800	820	695	579	481	402	337	297
ROG	1199	1261	1086	671	536	473	413	389	380	382
PM_{10}	355	352	352	385	380	385	361	345	350	359
PM_{25}	192	183	176	180	175	175	167	161	161	162
CO	4287	4310	4089	3774	3053	2510	2105	1817	1620	1505

Table 4-27

San Joaquin Valley Air Basin

Population and VMT

Compared to California's other urban areas, the population and number of vehicle miles traveled each day in the San Joaquin Valley Air Basin is projected to grow at a much faster rate during the 1980 to 2020 time period. The population is projected to increase about 150 percent, from nearly 2 million in 1980 to nearly 5 million in 2020. During the same period, the daily VMT is projected to increase by 312 percent, from nearly 33 million miles per day in 1980 to over 135 million miles per day in 2020. These growth rates are much higher than the growth rates in other areas.

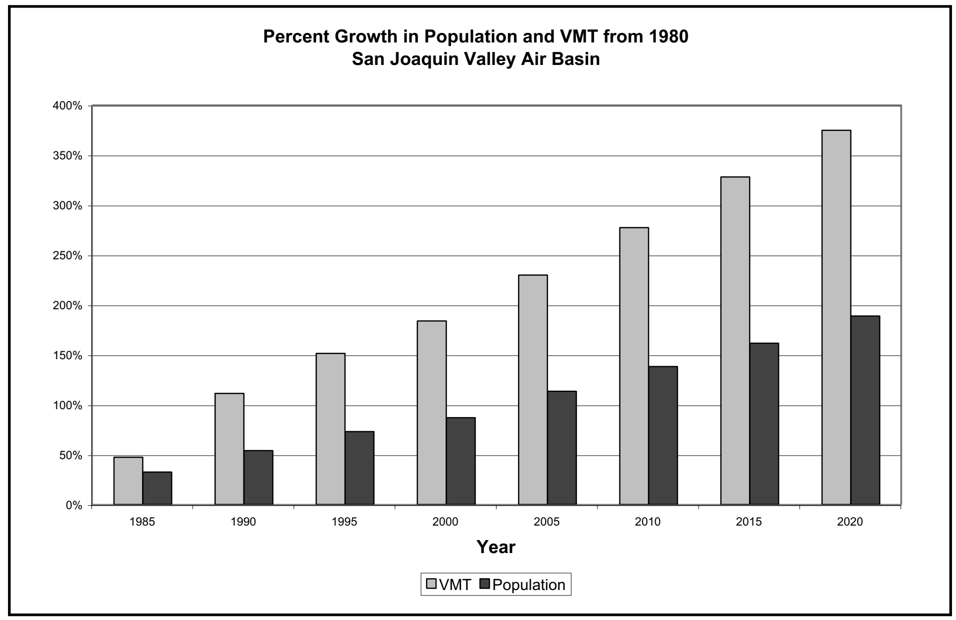

Figure 4-28

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1979840	2275776	2645192	2972618	3212583	3632469	3959518	4389922	4820322
Avg. Daily VMT/1000	32884	42075	60357	71772	81055	94209	107741	122270	135618

Table 4-28

San Joaquin Valley Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursors NO_x and ROG are decreasing in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO_x emissions have been reduced by the adoption of more stringent emission standards. Stricter standards have reduced ROG emissions from motor vehicles since 1980, even though VMT have been increasing. Stationary and area-wide sources of ROG include petroleum production operations and the use of solvents. Stricter emission standards and new controls have reduced the ROG emissions from these sources.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***658***	***810***	***800***	***820***	***695***	***579***	***481***	***402***	***337***	***297***
Stationary Sources	232	308	296	283	215	158	128	124	126	127
Area-wide Sources	26	26	26	25	25	24	24	24	23	23
On-Road Mobile	219	252	292	320	288	239	196	145	98	68
Gasoline Vehicles	169	171	168	174	161	121	83	58	40	29
Diesel Vehicles	50	81	124	145	127	118	113	87	57	39
Other Mobile	181	223	185	192	168	157	134	109	90	78
Gasoline Fuel	4	5	5	6	6	6	7	7	6	6
Diesel Fuel	169	211	174	182	157	146	121	97	78	66
Other Fuel	8	8	5	5	5	6	6	6	6	6

Table 4-29

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***1199***	***1261***	***1086***	***671***	***536***	***473***	***413***	***389***	***380***	***382***
Stationary Sources	692	743	584	201	107	103	91	95	97	100
Area-wide Sources	166	173	179	185	193	190	190	196	204	215
On-Road Mobile	289	283	265	221	172	119	84	59	43	33
Gasoline Vehicles	287	278	258	214	166	113	79	55	39	30
Diesel Vehicles	3	5	8	8	6	5	5	4	4	3
Other Mobile	52	62	58	63	63	61	47	40	36	34
Gasoline Fuel	23	30	34	38	40	40	28	23	21	20
Diesel Fuel	16	20	16	17	15	14	12	9	7	5
Other Fuel	13	13	8	8	8	8	8	8	9	9

Table 4-30

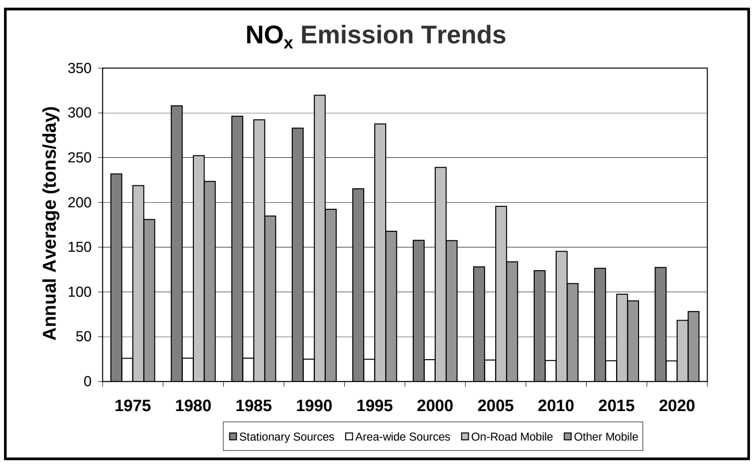

Figure 4-29

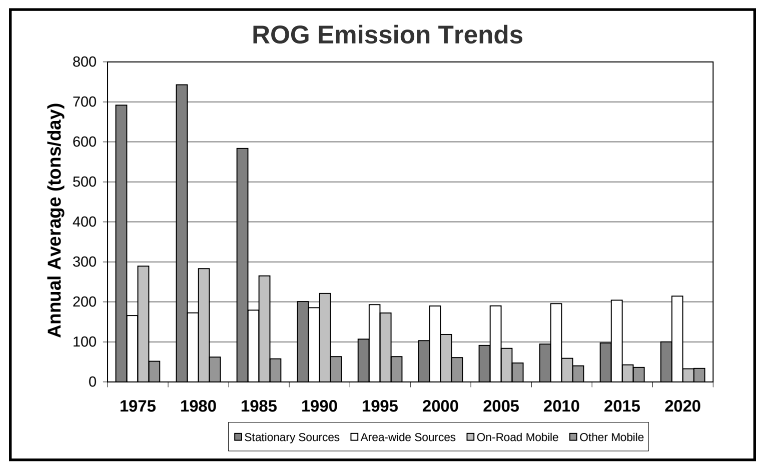

Figure 4-30

San Joaquin Valley Air Basin

Ozone Air Quality Trend

The ozone problem in the San Joaquin Valley ranks among the most severe in the State. Peak levels have not declined as much as the number of days that standards are exceeded. From 1985 to 2004, the maximum peak 8-hour indicator decreased only two percent. The number of national 8-hour standard exceedance days has been quite variable over the years. This variability is due, in part, to the influence of meteorology as well as changes to the monitoring network. The monitoring network was not as extensive during the 1980's as it has been during the last 14 years. For this reason, the period between 1990 to 2005 provides a better indication of trends. During this period, there has been an eight percent decrease in the three-year average of the number of exceedance days of the national 8-hour standard.

The ARB has identified the San Joaquin Valley Air Basin as both a contributor and a receptor for ozone transport. The Valley is a transport contributor to the Sacramento region, the Great Basin Valleys Air Basin, the Mountain Counties Air Basin, the Mojave Desert Air Basin, the North Central Coast Air Basin, and the South Central Coast Air Basin. In contrast, the San Joaquin Valley Air Basin is a receptor area for ozone transported from the Broader Sacramento Area and the San Francisco Bay Area Air Basin.

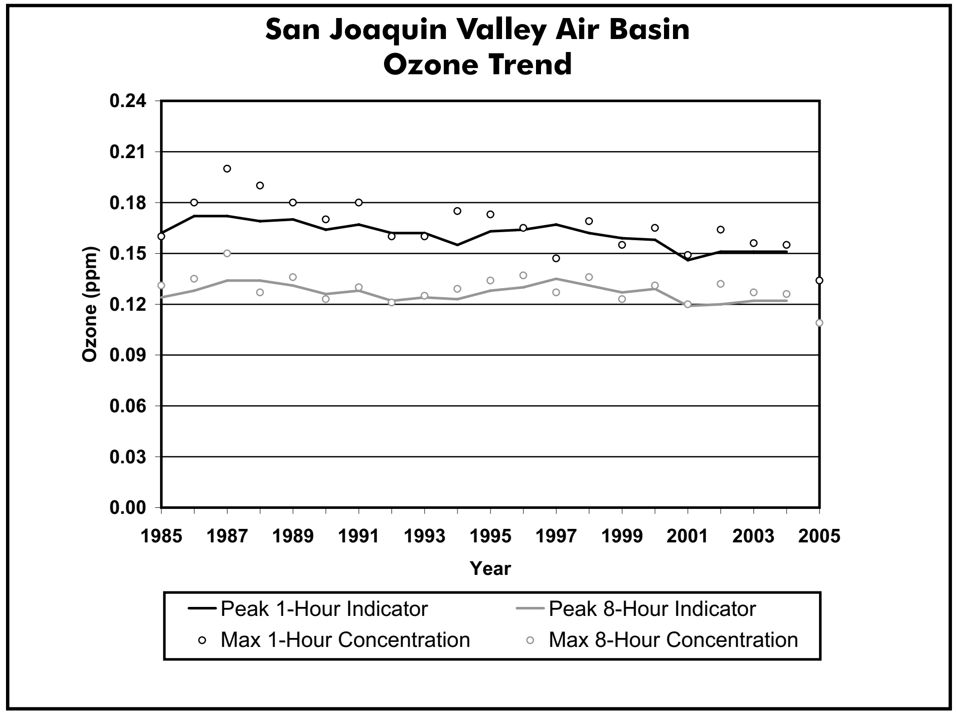

Figure 4-31

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005[1]
Peak 1-Hour Indicator	0.162	0.172	0.172	0.169	0.170	0.164	0.167	0.162	0.162	0.155	0.163	0.164	0.167	0.162	0.159	0.158	0.146	0.151	0.151	0.151	
Peak 8-Hour Indicator	0.124	0.128	0.134	0.134	0.131	0.126	0.128	0.122	0.124	0.123	0.128	0.130	0.135	0.131	0.127	0.129	0.119	0.120	0.122	0.122	
4th High 1-Hr. in 3 Yrs	0.160	0.170	0.170	0.170	0.170	0.160	0.160	0.160	0.160	0.160	0.165	0.165	0.164	0.161	0.161	0.161	0.146	0.151	0.151	0.151	
Avg. of 4th High 8-Hr. in 3 Yrs	0.111	0.117	0.118	0.121	0.120	0.119	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.113	0.111	0.109	0.115	0.115	0.116	
Maximum 1-Hr. Concentration	0.160	0.180	0.200	0.190	0.180	0.170	0.180	0.160	0.160	0.175	0.173	0.165	0.147	0.169	0.155	0.165	0.149	0.164	0.156	0.155	0.134
Max. 8-Hr. Concentration	0.131	0.135	0.150	0.127	0.136	0.123	0.130	0.121	0.125	0.129	0.134	0.137	0.127	0.136	0.123	0.131	0.120	0.132	0.127	0.126	0.109
Days Above State Standard	149	147	156	156	148	131	133	127	125	118	124	120	110	90	123	114	123	127	137	106	83
Days Above Nat. 1-Hr. Std.	53	59	65	74	54	45	51	29	43	43	44	56	16	39	28	30	32	31	37	9	8
Days Above Nat. 8-Hr. Std.	127	134	148	140	133	104	121	119	103	108	109	114	95	84	117	103	109	125	134	109	72

[1] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2004 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-31

San Joaquin Valley Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} have remained relatively unchanged between 1975 and 2005 and are projected to remain unchanged through 2020. PM_{10} emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, waste burning, and residential fuel combustion (including wood).

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the San Joaquin Valley Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***355***	***352***	***352***	***385***	***380***	***385***	***361***	***345***	***350***	***359***
Stationary Sources	58	42	35	28	27	28	23	24	25	26
Area-wide Sources	281	289	297	335	336	341	323	307	312	320
On-Road Mobile	4	6	8	9	7	6	6	6	6	7
Gasoline Vehicles	2	2	2	2	3	3	4	4	5	6
Diesel Vehicles	2	4	6	6	4	3	3	2	2	1
Other Mobile	12	15	12	13	10	10	9	8	7	6
Gasoline Fuel	0	1	1	1	1	1	1	1	2	2
Diesel Fuel	11	14	11	12	9	8	7	6	5	4
Other Fuel	1	1	1	1	0	0	1	1	1	1

Table 4-32

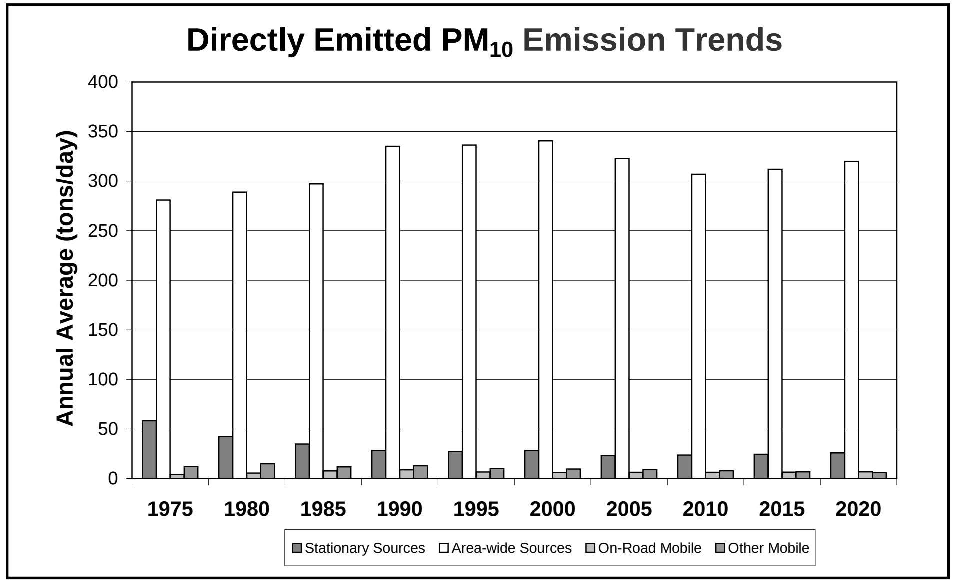

Figure 4-32

San Joaquin Valley Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ decreased from 1975 to 2005 and are projected to continue decreasing through 2020. $PM_{2.5}$ emissions in the San Joaquin Valley are dominated by emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, waste burning, and residential fuel combustion (including wood).

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 60 percent of the ambient $PM_{2.5}$ in the San Joaquin Valley Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***192***	***183***	***176***	***180***	***175***	***175***	***167***	***161***	***161***	***162***
Stationary Sources	47	33	24	19	19	19	16	17	17	18
Area-wide Sources	131	133	134	143	142	143	138	133	133	134
On-Road Mobile	3	5	6	7	5	4	4	4	4	4
Gasoline Vehicles	1	1	1	1	2	2	2	2	3	3
Diesel Vehicles	2	4	6	6	4	3	2	2	1	1
Other Mobile	11	14	11	12	9	9	8	7	6	5
Gasoline Fuel	0	0	0	1	1	1	1	1	1	1
Diesel Fuel	10	13	10	11	8	7	7	5	4	3
Other Fuel	1	1	0	1	0	0	1	1	1	1

Table 4-33

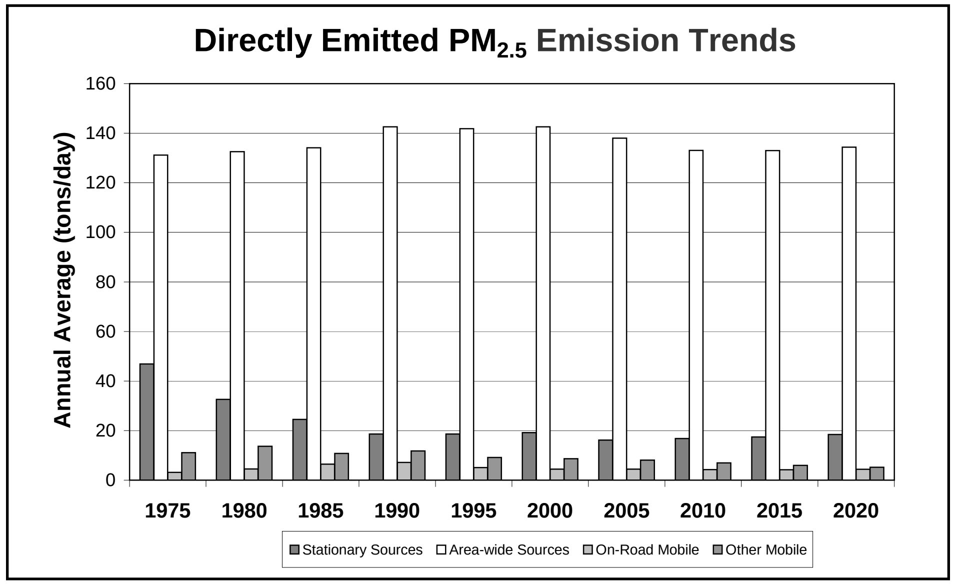

Figure 4-33

San Joaquin Valley Air Basin

PM_{10} Air Quality Trend

The available PM_{10} data show some variation during the trend period, but overall, there has been a downward trend. Part of the variation can be attributed to meteorology. Long periods of stagnation during the winter months allow PM to accumulate over many days with resulting high concentrations. The low values for the annual average in 1988 and 1989 are due to the limited number of monitors with complete data for these years during the startup of the PM monitoring network. The period between 1990 and 2004 provides a better indication of trends. Over this period, the three-year average of the annual average (State) shows a decrease of more than 26 percent. The calculated number of days exceeding the State and national 24-hour standards also shows a decrease. There were 300 calculated State standard exceedance days and 40 calculated national standard exceedance days during 1988. During 2004, there were 196 calculated State standard exceedance days and three national standard exceedance days, with the national exceedances due to a natural windblown dust event.

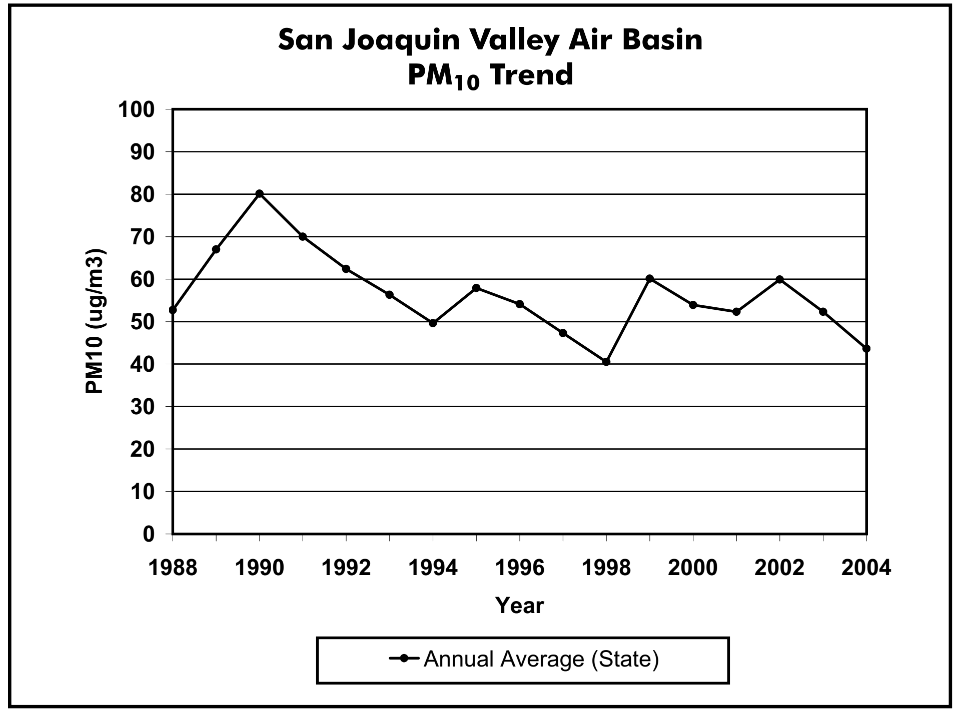

Figure 4-34

Although PM_{10} air quality has improved overall in the San Joaquin Valley Air Basin, values overall are highly variable. The variability appears to be a result of meteorology, while the overall downward trend is consistent with a change in emissions. While the San Joaquin Valley is nearing attainment for the national PM_{10} standards, based on the ambient data, it will still be a number of years before this area reaches attainment of the more stringent State standards.

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				206	237	439	279	186	239	192	279	153	199	167	186	153	221	194	150	219
Max. 24-Hr. Concentration (Nat)				244	250	439	279	183	239	190	279	153	199	160	183	145	205	189	150	217
Annual Average (State)				52.7	67.0	80.1	70.0	62.4	56.3	49.6	57.9	54.1	47.3	40.5	60.1	53.9	52.3	59.9	52.3	43.6
Annual Average (Nat)				67.4	79.3	79.3	69.9	62.9	56.3	50.1	58.2	54.1	48.2	39.9	59.5	53.1	57.4	59.2	52.4	44.6
Calc Days Above State 24-Hr Std				300	302	313	285	273	233	253	246	225	188	185	216	237	236	267	242	196.5
Calc Days Above Nat 24-Hr Std				40	40	56	40	3	11	8	8	0	3	6	12	0	12	8	0	3

Table 4-34

San Joaquin Valley Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average (national) $PM_{2.5}$ concentrations in the San Joaquin Valley Air Basin show a definite downward trend from 1999 through 2004. The State annual average concentrations remained relatively constant from 1999 through 2003, but decreased significantly in 2004. The differences in trends are due to differences in State and national monitoring methods. The 98th percentile of 24-hour $PM_{2.5}$ concentrations also declined during this period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. The San Joaquin Valley Air Basin is currently designated as nonattainment for the national $PM_{2.5}$ standards. Measures adopted as part of the upcoming $PM_{2.5}$ State Implementation Plan, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

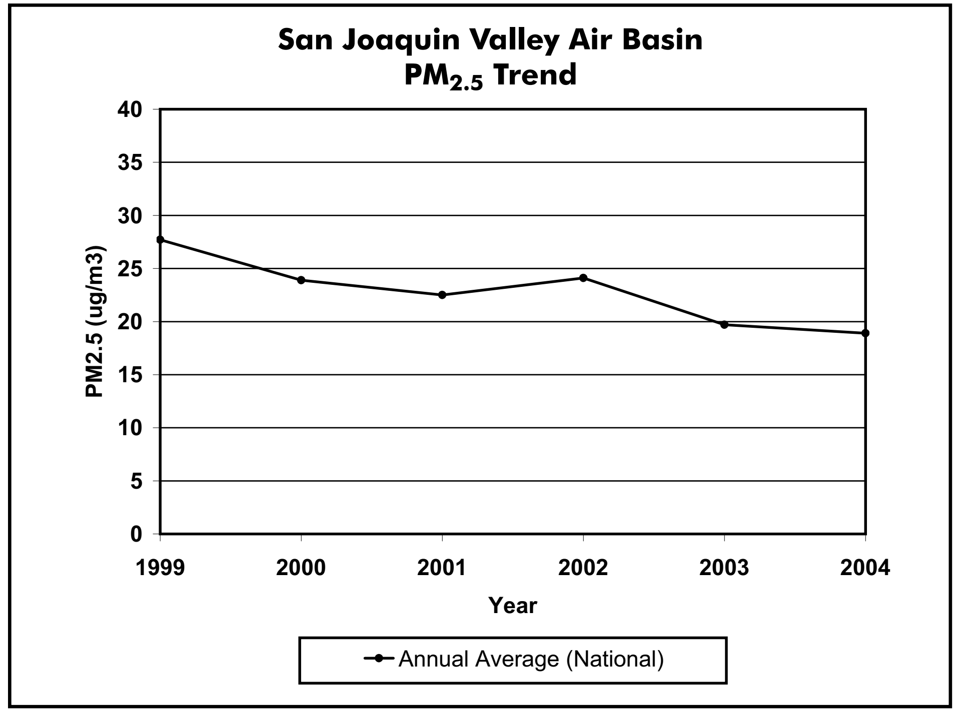

Figure 4-35

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															136.0	160.0	154.7	104.3	84.5	77.0
Max. 24-Hr. Concentration (Nat)															136.0	160.0	154.7	90.7	67.8	71.0
98th Percentile of 24-Hr Conc.															120.0	108.0	96.0	80.4	56.0	54.0
Annual Average (State)															23.4	23.9	20.8	24.1	24.8	18.2
Avg. of Qtrly. Means (Nat)															27.7	23.9	22.5	24.1	19.7	18.9

Table 4-35

San Joaquin Valley Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO decreased between 1975 and 2005 and are projected to continue decreasing through 2020. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1975, despite increases in VMT, with the introduction of new automotive emission controls and fleet turnover.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***4287***	***4310***	***4089***	***3774***	***3053***	***2510***	***2105***	***1817***	***1620***	***1505***
Stationary Sources	189	160	63	77	64	56	54	55	56	58
Area-wide Sources	849	848	848	844	834	830	827	825	822	819
On-Road Mobile	2895	2869	2784	2428	1751	1252	874	606	416	297
Gasoline Vehicles	2883	2848	2750	2391	1721	1227	851	585	397	280
Diesel Vehicles	12	21	34	37	30	25	24	21	18	18
Other Mobile	353	433	393	426	404	372	349	332	326	331
Gasoline Fuel	175	233	241	275	267	247	228	213	209	214
Diesel Fuel	68	88	76	80	70	58	48	42	39	37
Other Fuel	110	111	76	70	67	67	73	76	79	81

Table 4-36

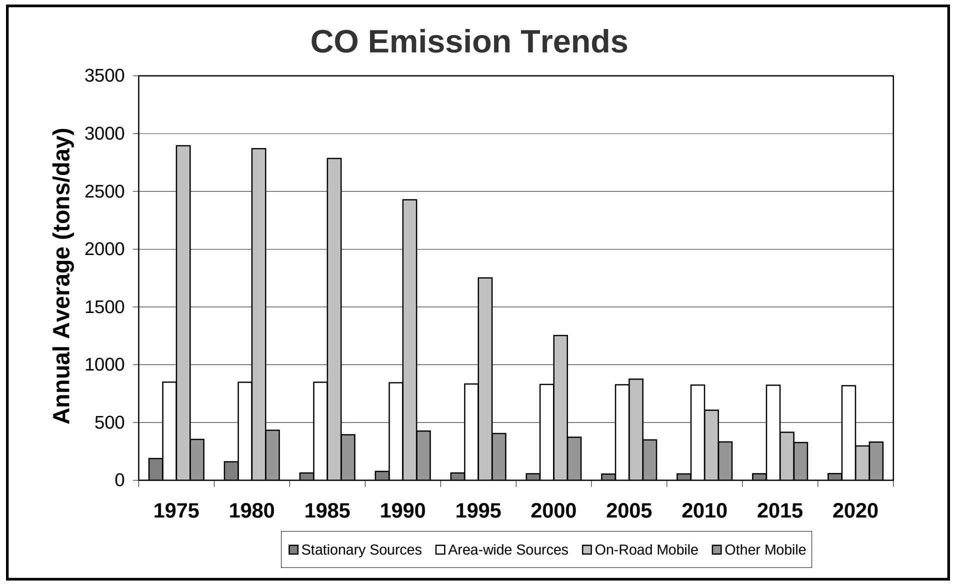

Figure 4-36

San Joaquin Valley Air Basin

Carbon Monoxide Air Quality Trend

Carbon monoxide concentrations show a fairly consistent downward trend from 1985 through 2004. Similar to other areas of the State, the trend line for the San Joaquin Valley Air Basin shows a slight increase during the late 1980s, probably related to meteorology. The maximum peak 8-hour indicator for 2004 is almost 69 percent lower than that for 1985. Measured concentrations in the San Joaquin Valley Air Basin have not exceeded the national CO standards since 1991, and concentrations have not exceeded the State standards for the last nine years. Much of the decline in ambient CO concentrations can be attributed to the introduction of clean fuels and newer, cleaner motor vehicles.

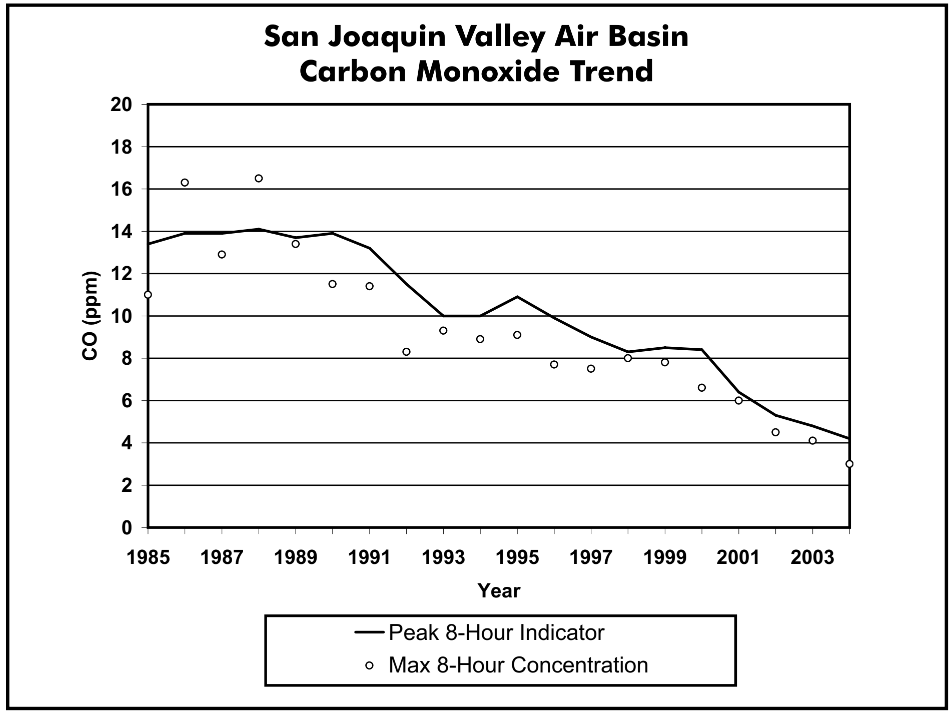

Figure 4-37

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.4	13.9	13.9	14.1	13.7	13.9	13.2	11.5	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	6.4	5.3	4.8	4.2
Max. 1-Hr. Concentration	18.0	21.0	16.0	19.0	23.0	17.0	19.0	13.0	13.0	15.0	12.0	11.0	9.9	10.3	11.9	10.1	16.0	6.1	5.8	4.6
Max. 8-Hr. Concentration	11.0	16.3	12.9	16.5	13.4	11.5	11.4	8.3	9.3	8.9	9.1	7.7	7.5	8.0	7.8	6.6	6.0	4.5	4.1	3.0
Days Above State 8-Hr. Std.	7	13	4	5	24	10	3	0	2	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	7	11	4	6	18	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-37

San Joaquin Valley Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x and NO_2 increased between 1975 and 1990. Since 1990, however, emissions decreased and are projected to continue declining in the San Joaquin Valley Air Basin. Both stationary source and motor vehicle NO_x emissions have been reduced by the adoption of more stringent emission standards.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***658***	***810***	***800***	***820***	***695***	***579***	***481***	***402***	***337***	***297***
Stationary Sources	232	308	296	283	215	158	128	124	126	127
Area-wide Sources	26	26	26	25	25	24	24	24	23	23
On-Road Mobile	219	252	292	320	288	239	196	145	98	68
Gasoline Vehicles	169	171	168	174	161	121	83	58	40	29
Diesel Vehicles	50	81	124	145	127	118	113	87	57	39
Other Mobile	181	223	185	192	168	157	134	109	90	78
Gasoline Fuel	4	5	5	6	6	6	7	7	6	6
Diesel Fuel	169	211	174	182	157	146	121	97	78	66
Other Fuel	8	8	5	5	5	6	6	6	6	6

Table 4-38

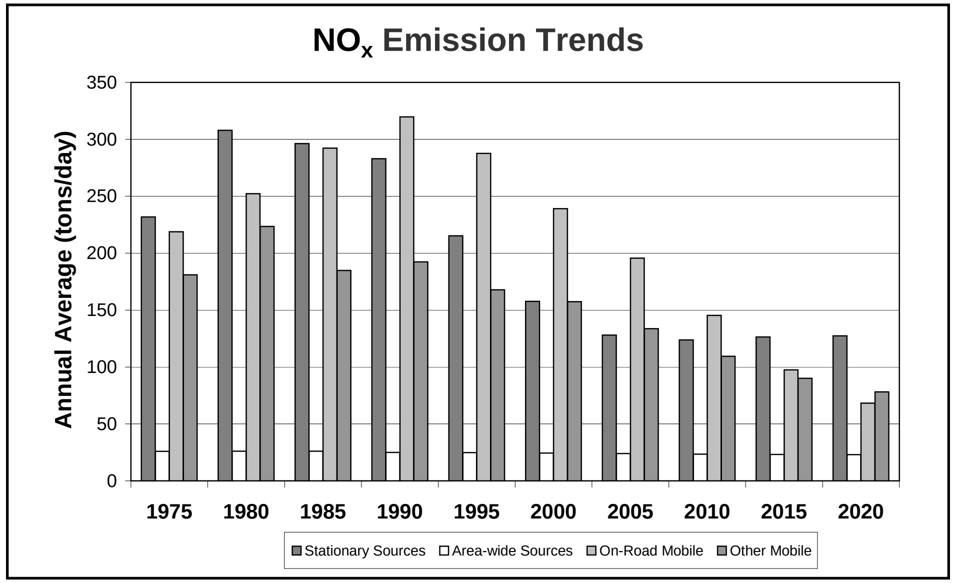

Figure 4-38

San Joaquin Valley Air Basin

Nitrogen Dioxide Air Quality Trend

The San Joaquin Valley has attained both the State and national nitrogen dioxide standards for more than 20 years. During this time-period, there have been no concentrations that exceeded the level of the State 1-hour or the national annual standard. Ambient concentrations continue to be well below the level of both standards. From 1985 through 1989, ambient levels increased somewhat, but remained below the level of the standard and have shown substantial decreases since 1990. The peak 1-hour indicator has declined by more than 37 percent since 1990. This downward trend is expected to continue.

Nitrogen dioxide is formed from emissions of oxides of nitrogen, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's oxides of nitrogen emissions.

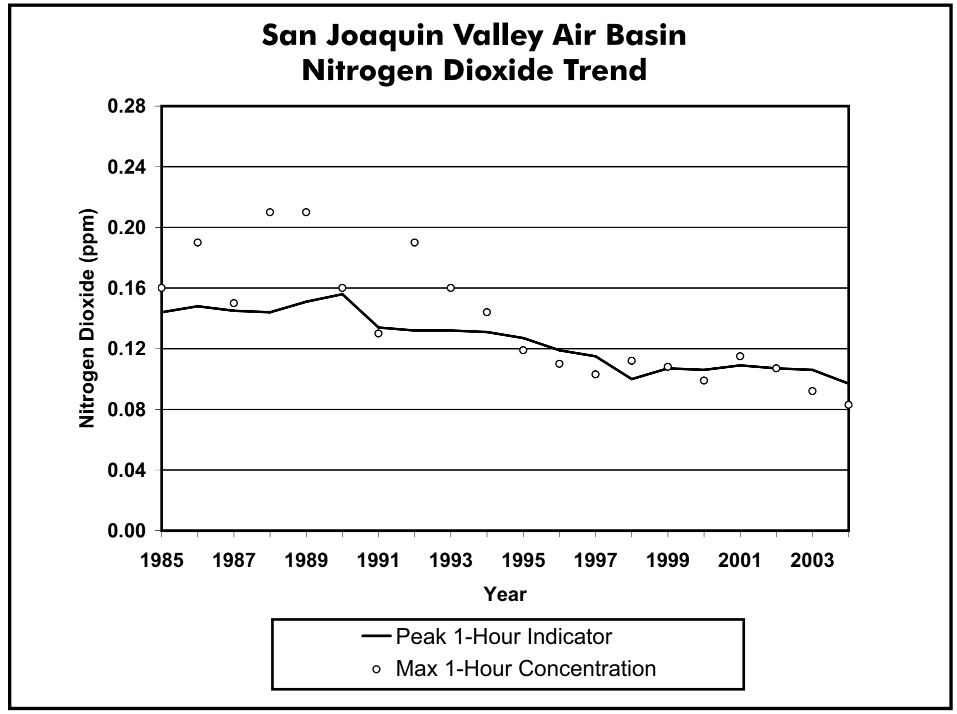

Figure 4-39

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.144	0.148	0.145	0.144	0.151	0.156	0.134	0.132	0.132	0.131	0.127	0.119	0.115	0.100	0.107	0.106	0.109	0.107	0.106	0.097
Max. 1-Hr. Concentration	0.160	0.190	0.150	0.210	0.210	0.160	0.130	0.190	0.160	0.144	0.119	0.110	0.103	0.112	0.108	0.099	0.115	0.107	0.092	0.083
Max. Annual Average	0.031	0.030	0.030	0.032	0.033	0.031	0.030	0.027	0.024	0.024	0.029	0.029	0.024	0.023	0.027	0.024	0.022	0.024	0.020	0.018

Table 4-39

San Diego Air Basin

Introduction - Area Description

The San Diego Air Basin lies in the southwest corner of California and comprises all of San Diego County. However, the population and emissions are concentrated mainly in the western portion of the County. The air basin covers 4,200 square miles, includes about eight percent of the State's population, and produces about seven percent of the State's criteria pollutant emissions. Because of its southerly location and proximity to the ocean, much of the San Diego Air Basin has a relatively mild climate.

Air quality in the San Diego Air Basin is impacted not only by local emissions, but also by pollutants transported from other areas -- in particular, ozone and ozone precursor emissions transported from the South Coast Air Basin and Mexico. Although the impact of transport is particularly important on days with high ozone concentrations, transported pollutants and emissions cannot be blamed entirely for the ozone problem in the San Diego area. Studies show that emissions from the San Diego Air Basin are sufficient, on their own, to cause ozone violations.

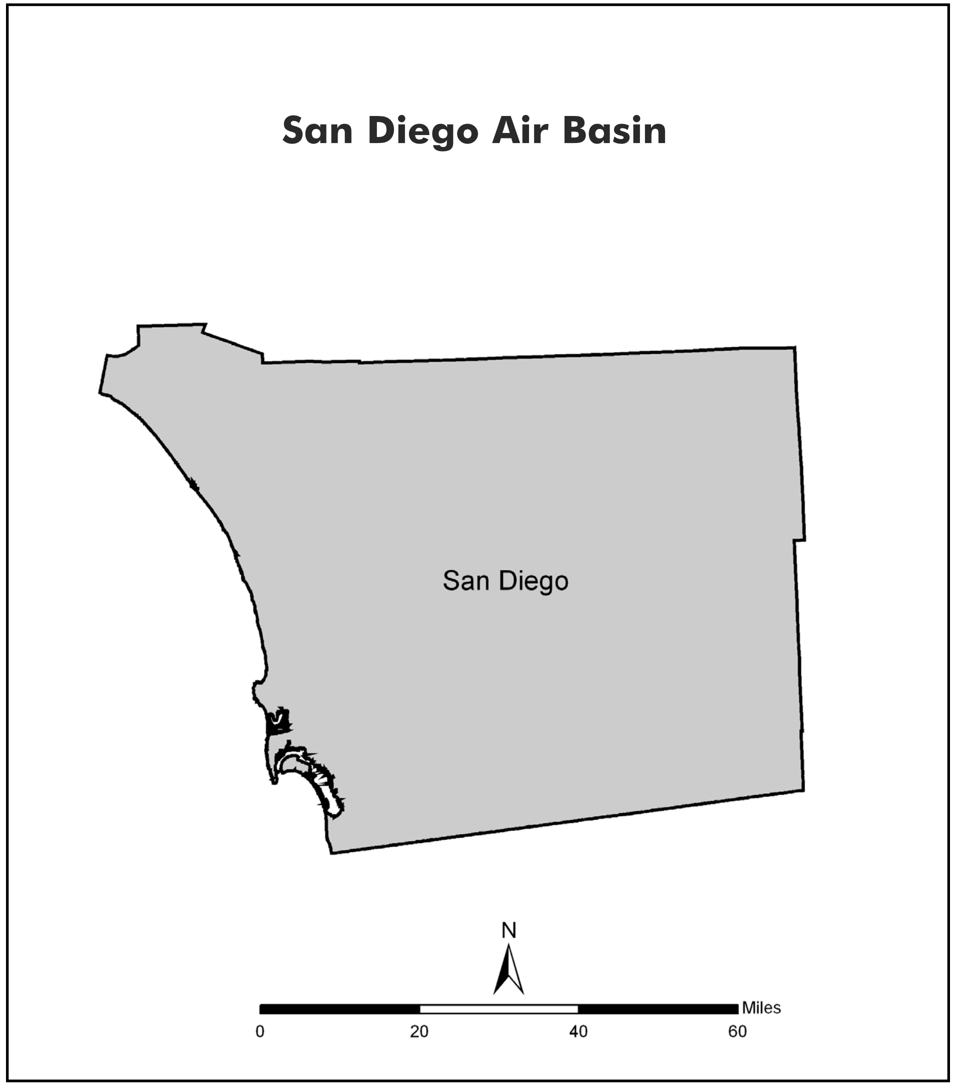

Figure 4-40

San Diego Air Basin

Emission Trends and Forecasts

Emissions of NO_x, ROG, PM_{10}, and CO in the San Diego Air Basin have been following the statewide trends since 1975. These trends are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources (both on-road and other) are by far the largest contributors to NO_x, ROG, and CO emissions in the San Diego Air Basin. The majority of the PM_{10} emissions are from areawide sources.

San Diego Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_X	280	273	287	319	270	231	189	157	131	125
ROG	439	437	413	343	267	226	186	173	168	170
PM_{10}	68	76	84	102	97	105	112	119	125	133
PM_{25}	29	31	30	35	33	36	38	40	42	45
CO	3299	3030	2924	2458	1719	1279	938	742	610	539

Table 4-40

San Diego Air Basin

Population and VMT

Population in the San Diego Air Basin during the 1980-2020 period is projected to more than double: from almost 1.9 million in 1980 to almost 3.9 million in 2020. During this same time period, the number of vehicle miles traveled each day is projected to triple, from almost 32 million miles per day in 1980 to over 97 million miles per day in 2020. As in other parts of California, overall air quality in the San Diego Air Basin has improved, despite high growth rates, indicating the benefits of cleaner technologies.

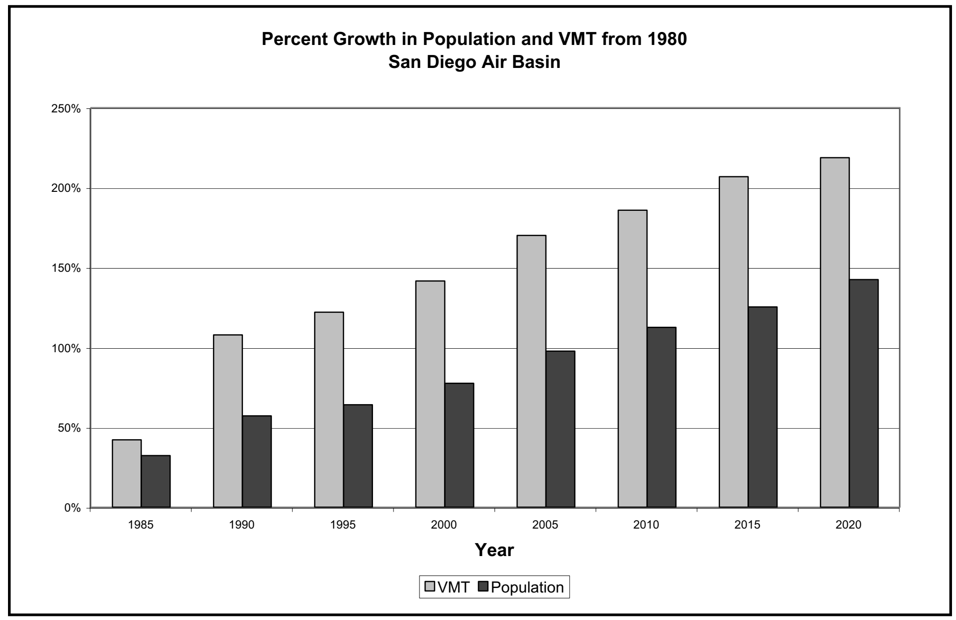

Figure 4-41

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1873300	2109300	2504900	2615200	2836179	3073469	3258951	3446262	3633572
Avg. Daily VMT/1000	31707	43517	63591	67943	73909	82660	87481	93886	97542

Table 4-41

San Diego Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of the ozone precursor NO_x increase between 1975 and 1990 and decrease thereafter. ROG emissions have been decreasing overall since 1975. These decreases are mostly due to decreased emissions from motor vehicles, brought about by stricter motor vehicle emission standards. Stationary and area-wide source emissions of ROG have remained mostly unchanged over the last 20 years, with stricter emission standards offsetting industrial and population growth.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***280***	***273***	***287***	***319***	***270***	***231***	***189***	***157***	***131***	***125***
Stationary Sources	48	32	17	19	16	14	9	11	11	12
Area-wide Sources	2	3	3	3	3	3	3	3	3	3
On-Road Mobile	178	174	195	216	185	149	113	83	57	41
Gasoline Vehicles	168	155	156	157	133	96	62	43	30	22
Diesel Vehicles	10	19	39	59	52	52	51	40	27	20
Other Mobile	52	65	72	81	66	66	65	61	60	69
Gasoline Fuel	3	3	4	5	5	6	6	6	6	5
Diesel Fuel	44	56	62	68	53	50	46	38	31	27
Other Fuel	5	6	6	7	8	11	13	17	23	36

Table 4-42

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***439***	***437***	***413***	***343***	***267***	***226***	***186***	***173***	***168***	***170***
Stationary Sources	40	57	54	52	45	50	55	63	70	76
Area-wide Sources	34	40	44	47	41	41	38	40	42	44
On-Road Mobile	334	303	272	194	132	89	60	43	32	25
Gasoline Vehicles	334	302	269	191	129	86	58	41	30	24
Diesel Vehicles	1	1	3	3	3	2	2	2	2	1
Other Mobile	31	37	44	50	49	46	33	27	25	24
Gasoline Fuel	23	28	35	40	40	38	24	19	17	16
Diesel Fuel	4	5	6	7	6	5	5	4	3	2
Other Fuel	3	3	3	3	3	4	4	4	5	6

Table 4-43

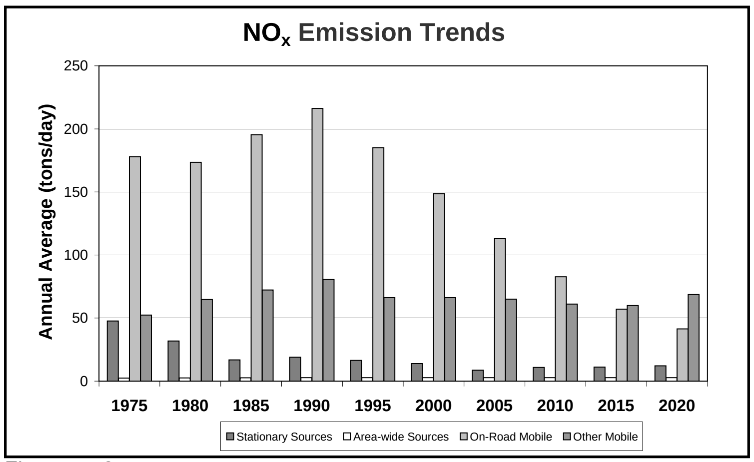

Figure 4-42

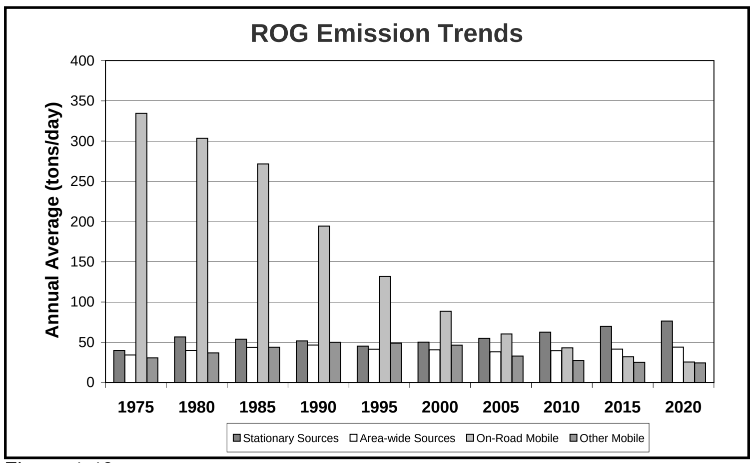

Figure 4-43

San Diego Air Basin

Ozone Air Quality Trend

Both the peak indicator and the number of days above the State and national ozone standards have decreased substantially over the last 20 years. The peak 8-hour ozone indicator shows an overall decline of 32 percent from 1985 to 2004. The number of State and national 1-hour standard exceedance days has dropped even more. There were 148 State 1-hour standard exceedance days during 1985 compared with 11 during 2005. This represents a decrease of about 88 percent in the three-year average of the State standard exceedance days. During 1985, there were 109 national 8-hour standard exceedance days compared with one during 2005.

The San Diego Air Basin is the only one of the five major air basins the ARB has not identified as a transport contributor to a downwind area. The San Diego area is, however, a transport receptor. While it is clear that additional local emission controls will be needed to reach attainment of the ozone standards in the San Diego area, because of transport, future air quality in this area will also be affected by emission controls and growth in the South Coast Air Basin and, to some extent, Mexico.

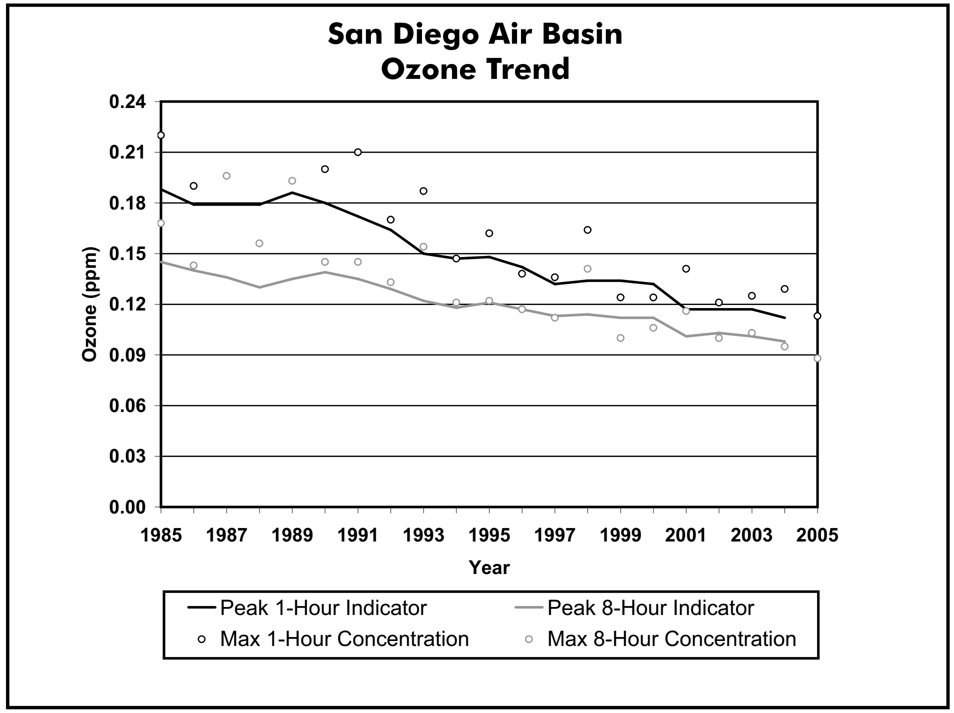

Figure 4-44

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005[1]
Peak 1-Hour Indicator	0.188	0.179	0.179	0.179	0.186	0.180	0.172	0.164	0.150	0.147	0.148	0.142	0.132	0.134	0.134	0.132	0.117	0.117	0.117	0.112	
Peak 8-Hour Indicator	0.145	0.140	0.136	0.130	0.135	0.139	0.135	0.129	0.122	0.118	0.121	0.117	0.113	0.114	0.112	0.112	0.101	0.103	0.101	0.098	
4th High 1-Hr. in 3 Yrs	0.210	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.138	0.135	0.135	0.131	0.118	0.118	0.118	0.115	
Avg. of 4th High 8-Hr. in 3 Yrs	0.132	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089	
Maximum 1-Hr. Concentration	0.220	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129	0.113
Max. 8-Hr. Concentration	0.168	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095	0.088
Days Above State Standard	148	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12	11
Days Above Nat. 1-Hr. Std.	50	42	40	45	56	39	27	19	14	9	12	2	1	9	0	0	2	0	1	1	0
Days Above Nat. 8-Hr. Std.	109	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8	1

[1] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2003 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-44

San Diego Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} are projected to almost double in the San Diego Air Basin between 1975 and 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 70 percent of the ambient PM_{10} in the San Diego Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
All Sources	***68***	***76***	***84***	***102***	***97***	***105***	***112***	***119***	***125***	***133***
Stationary Sources	17	12	5	7	8	7	8	10	10	11
Area-wide Sources	43	55	68	82	79	87	94	99	104	110
On-Road Mobile	3	3	4	5	4	4	5	5	5	5
Gasoline Vehicles	2	2	2	2	3	3	3	4	4	4
Diesel Vehicles	1	1	2	3	2	1	1	1	1	1
Other Mobile	6	6	7	8	6	6	7	6	7	7
Gasoline Fuel	0	1	1	1	1	1	1	1	1	2
Diesel Fuel	3	4	4	5	3	3	3	3	2	2
Other Fuel	2	2	2	2	2	2	2	3	3	4

Table 4-45

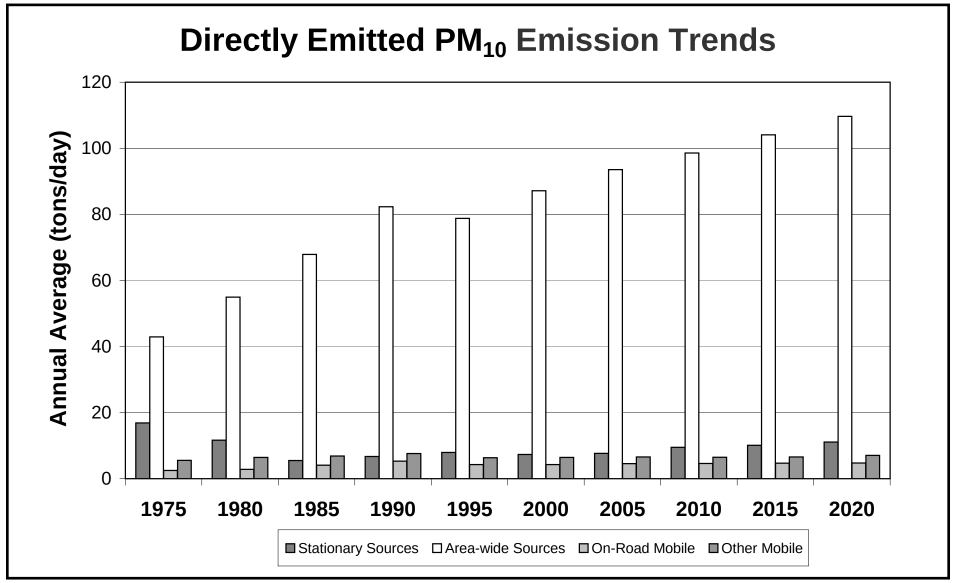

Figure 4-45

San Diego Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ increased steadily in the San Diego Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these area-wide sources is primarily due to population growth and increases in VMT.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NOx, SOx, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 50 percent of the ambient $PM_{2.5}$ in the San Diego Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***29***	***31***	***30***	***35***	***33***	***36***	***38***	***40***	***42***	***45***
Stationary Sources	11	9	3	4	6	6	7	8	9	10
Area-wide Sources	11	14	17	20	19	21	22	23	24	26
On-Road Mobile	2	2	3	4	3	3	3	3	3	3
Gasoline Vehicles	1	1	1	1	1	2	2	2	2	3
Diesel Vehicles	0	1	2	3	2	1	1	1	1	1
Other Mobile	5	6	6	7	6	6	6	6	6	6
Gasoline Fuel	0	0	1	1	1	1	1	1	1	1
Diesel Fuel	3	4	4	4	3	3	3	2	2	2
Other Fuel	2	2	2	2	2	2	2	3	3	4

Table 4-46

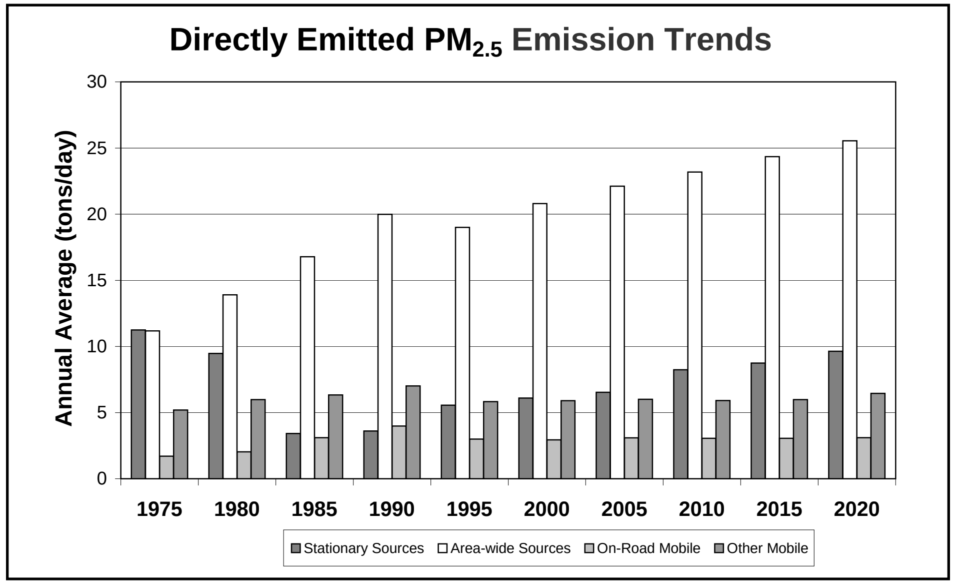

Figure 4-46

San Diego Air Basin

PM_{10} Air Quality Trend

PM_{10} concentrations in the San Diego Air Basin have changed little during the years for which reliable data are available. The annual average for 2004 exceeds the State annual standard and is actually higher than it was during 1989. This apparent lack of progress is, in part, a result of monitoring that began at a new site in 1993, which measured higher concentrations. The maximum 24-hour concentration also exceeds the State standard. During 2003, the maximum 24-hour concentration (State) was 289 $\mu g/m^3$. This value was due to the severe wildfires that occurred in Southern California in October of 2003. However, in 2004, the values have returned to their normal levels.

During 1988, there were 105 calculated State standard exceedance days, compared with 186 during 2004. Again, some of this apparent increase is attributable to the new site that began operating in 1993. There is a substantial amount of variability from year-to-year in the 24-hour statistics. This variability is a reflection of meteorology, the 1-in-6-day sampling schedule, and changes in monitoring location. Although ambient PM_{10} concentrations in the San Diego Air Basin are not as high as in some other areas of the State, additional emission controls will be needed to bring this area into attainment.

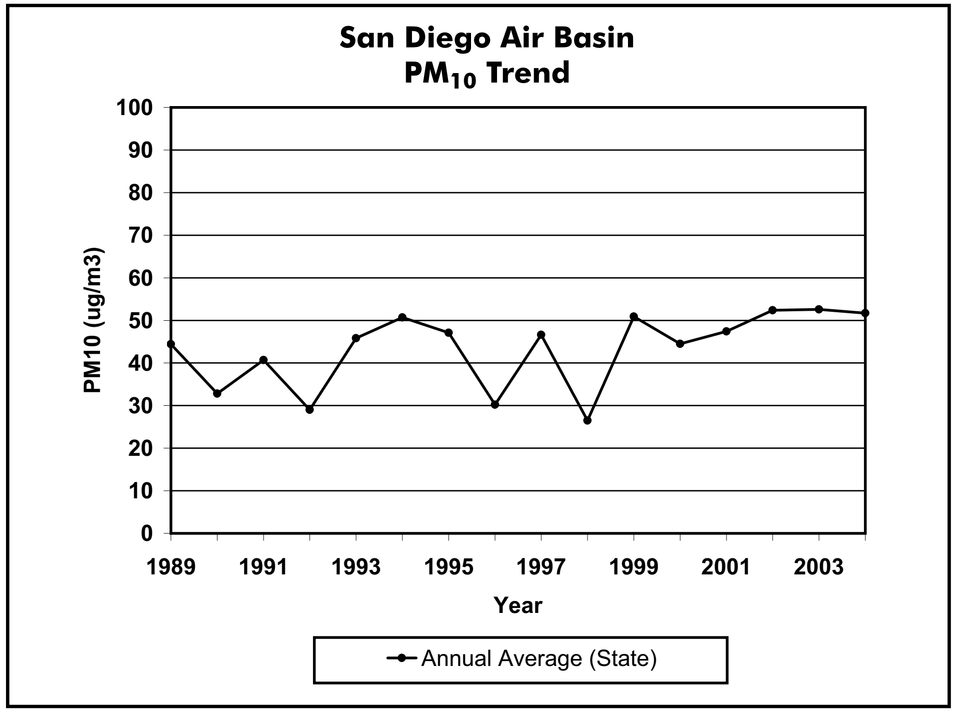

Figure 4-47

PM_{10} (ug/m3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				80	90	115	81	67	159	129	121	93	125	57	119	136	106	131	289	138
Max. 24-Hr. Concentration (Nat)				81	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137
Annual Average (State)					44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	26.5	50.9	44.5	47.4	52.4	52.6	51.7
Annual Average (Nat)				40.0	43.8	37.6	40.6	35.9	45.9	50.7	46.8	30.0	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2
Calc Days Above State 24-Hr Std				105	146	60	90	42	143.5	131	117	96	125	108	140	144	146	186	147	186
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	9	0

Table 4-47

San Diego Air Basin

$PM_{2.5}$ Air Quality Trend

Annual average $PM_{2.5}$ concentrations (national) in the San Diego Air Basin have declined during the period of 1999 through 2004. The State annual average concentrations also decreased over the last three years. The highest maximum 24-hour concentration of 239 ug/m^3 occurred in 2003, and was due to severe wildfires that occurred in Southern California during October. The 98th percentile of 24-hour $PM_{2.5}$ concentrations showed substantial variability within this period, a reflection of changes in meteorology and the influence of the 2003 wildfires. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM should help in reducing public exposure to $PM_{2.5}$ in this region.

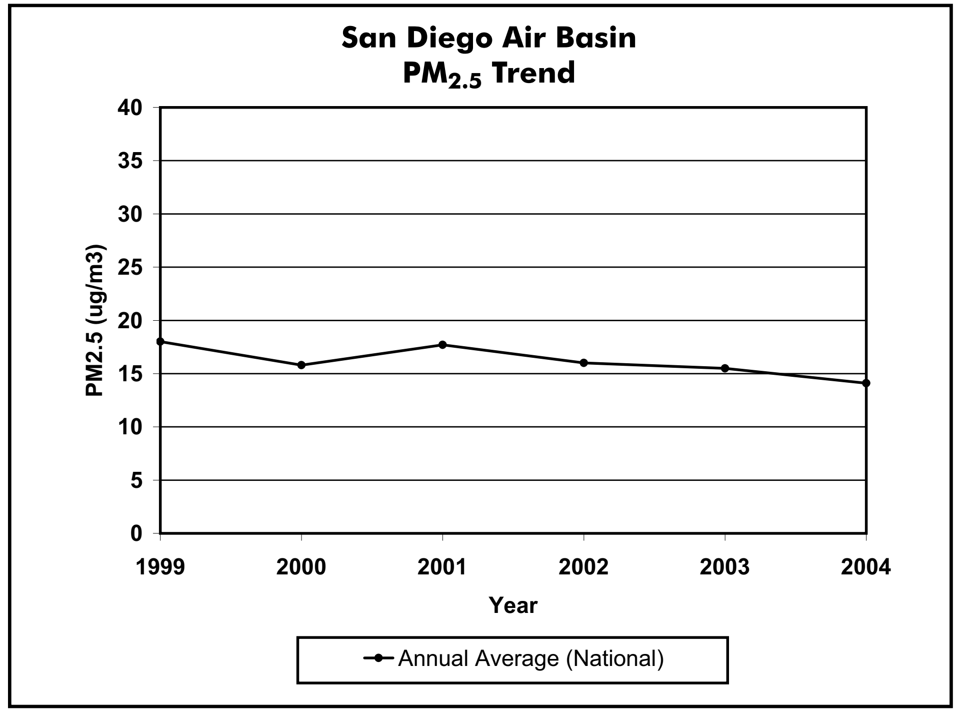

Figure 4-48

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															64.3	66.3	60.0	53.6	239.2	67.3
Max. 24-Hr. Concentration (Nat)															64.3	66.3	60.0	53.6	239.2	67.3
98th Percentile of 24-Hr Conc.															35.7	32.5	40.8	36.0	46.9	37.4
Annual Average (State)																		15.5	14.4	14.1
Avg. of Qtrly. Means (Nat)															18.0	15.8	17.7	16.0	15.5	14.1

Table 4-48

San Diego Air Basin
Carbon Monoxide Emission Trends and Forecasts

CO emissions in the San Diego Air Basin mirror the decreasing statewide trend from 1975 to 2020, even though the VMT are increasing. This is yet another example of how California's motor vehicle control program is having a positive impact on CO emissions.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***3299***	***3030***	***2924***	***2458***	***1719***	***1279***	***938***	***742***	***610***	***539***
Stationary Sources	30	29	28	28	26	40	25	31	31	33
Area-wide Sources	23	25	27	29	27	28	28	28	29	30
On-Road Mobile	3059	2740	2586	2067	1360	930	626	438	306	225
Gasoline Vehicles	3056	2735	2575	2052	1347	918	616	429	298	217
Diesel Vehicles	3	6	11	15	13	11	11	9	8	8
Other Mobile	187	236	282	334	306	282	258	244	244	252
Gasoline Fuel	147	188	234	279	258	237	214	200	199	205
Diesel Fuel	17	22	25	29	23	20	17	16	15	15
Other Fuel	23	25	23	26	25	25	26	28	29	32

Table 4-49

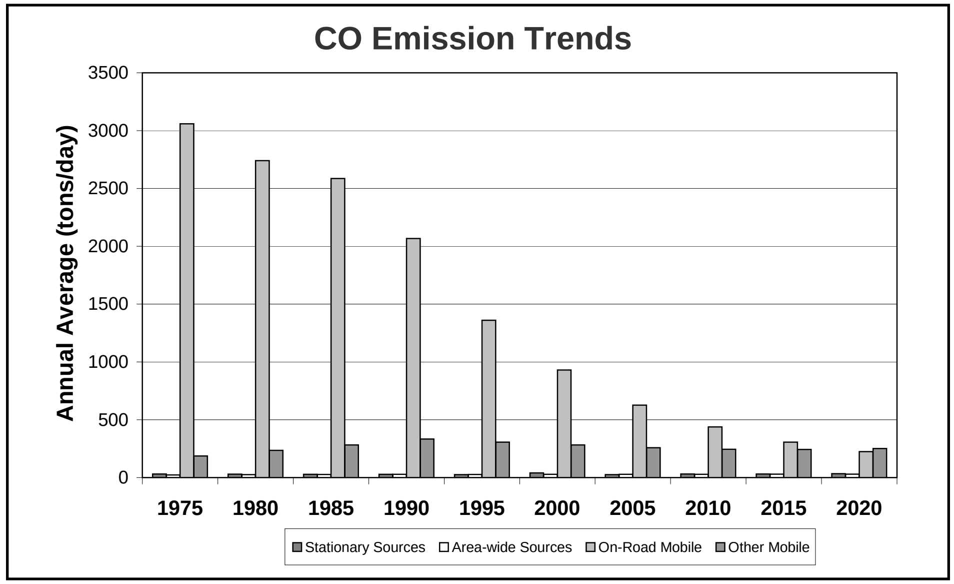

Figure 4-49

San Diego Air Basin

Carbon Monoxide Air Quality Trend

The peak 8-hour indicator for carbon monoxide in the San Diego Air Basin decreased substantially over the trend period: a 56 percent decrease from 1985 to 2004. As a result of these decreases, the national CO standards had not been exceeded in the San Diego Air Basin since 1989. However, in 2003 the CO standards were exceeded due to extensive wildfires that impacted air quality throughout Southern California. This exceedance does not impact San Diego's attainment status, because it qualifies as an exceptional event.

With existing and anticipated motor vehicle and clean fuels regulations, ambient CO concentrations should continue to decline. This should be sufficient to maintain a healthful level of carbon monoxide in this area.

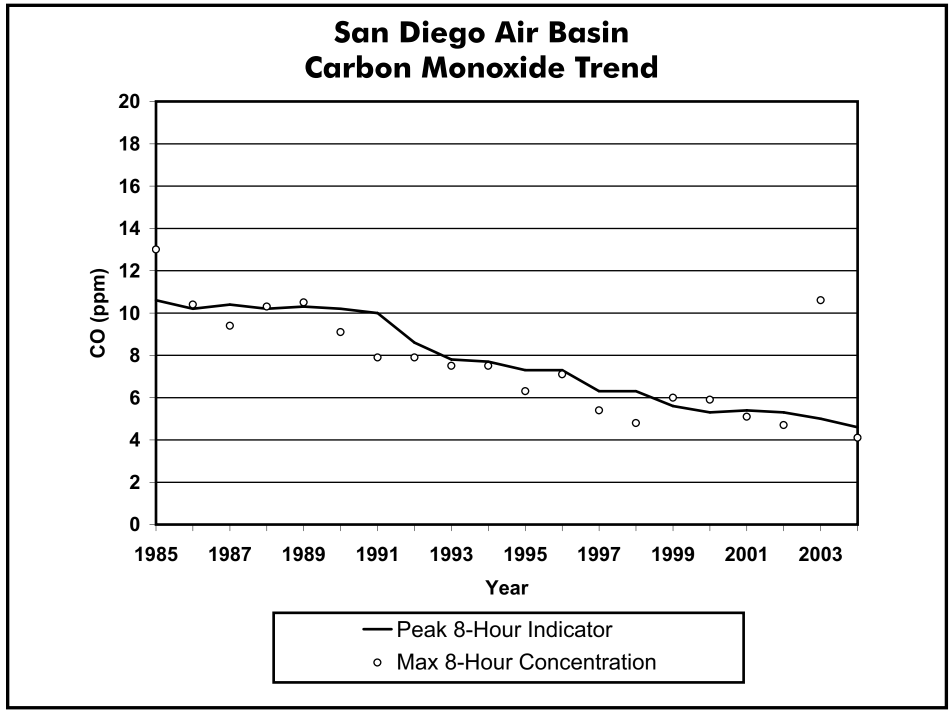

Figure 4-50

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	10.6	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6
Max. 1-Hr. Concentration	17.0	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9
Max. 8-Hr. Concentration	13.0	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1
Days Above State 8-Hr. Std.	5	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Days Above Nat. 8-Hr. Std.	3	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Table 4-50

San Diego Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

NO_x and NO_2 emissions in the San Diego Air Basin follow the declining statewide trend from 1990 to 2020. The continued adoption of more stringent motor vehicle and stationary source emission standards should continue to reduce nitrogen dioxide emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***280***	***273***	***287***	***319***	***270***	***231***	***189***	***157***	***131***	***125***
Stationary Sources	48	32	17	19	16	14	9	11	11	12
Area-wide Sources	2	3	3	3	3	3	3	3	3	3
On-Road Mobile	178	174	195	216	185	149	113	83	57	41
Gasoline Vehicles	168	155	156	157	133	96	62	43	30	22
Diesel Vehicles	10	19	39	59	52	52	51	40	27	20
Other Mobile	52	65	72	81	66	66	65	61	60	69
Gasoline Fuel	3	3	4	5	5	6	6	6	6	5
Diesel Fuel	44	56	62	68	53	50	46	38	31	27
Other Fuel	5	6	6	7	8	11	13	17	23	36

Table 4-51

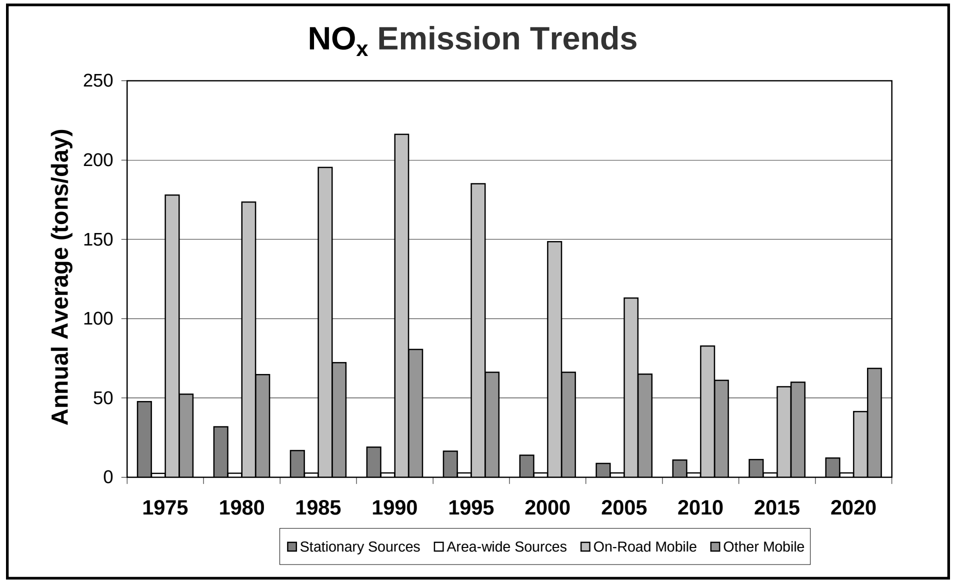

Figure 4-51

San Diego Air Basin

Nitrogen Dioxide Air Quality Trend

The San Diego Air Basin attains both the State and national nitrogen dioxide standards. Maximum 1-hour concentrations during the 1980s occasionally exceeded the level of the State 1-hour standard. However, these exceedances did not affect the area's attainment status. Ambient concentrations are now well below the levels of both the State and national standards. Data show that the maximum peak 1-hour indicator decreased over 38 percent from 1985 to 2004.

Because NO_x emissions contribute to ozone, as well as to NO_2, many of the ozone control measures help reduce ambient NO_2 concentrations. Furthermore, NO_x emission controls are a critical part of the ozone control strategy and are not expected to be relaxed in the future. As a result, these controls should ensure continued attainment of the State and national nitrogen dioxide standards.

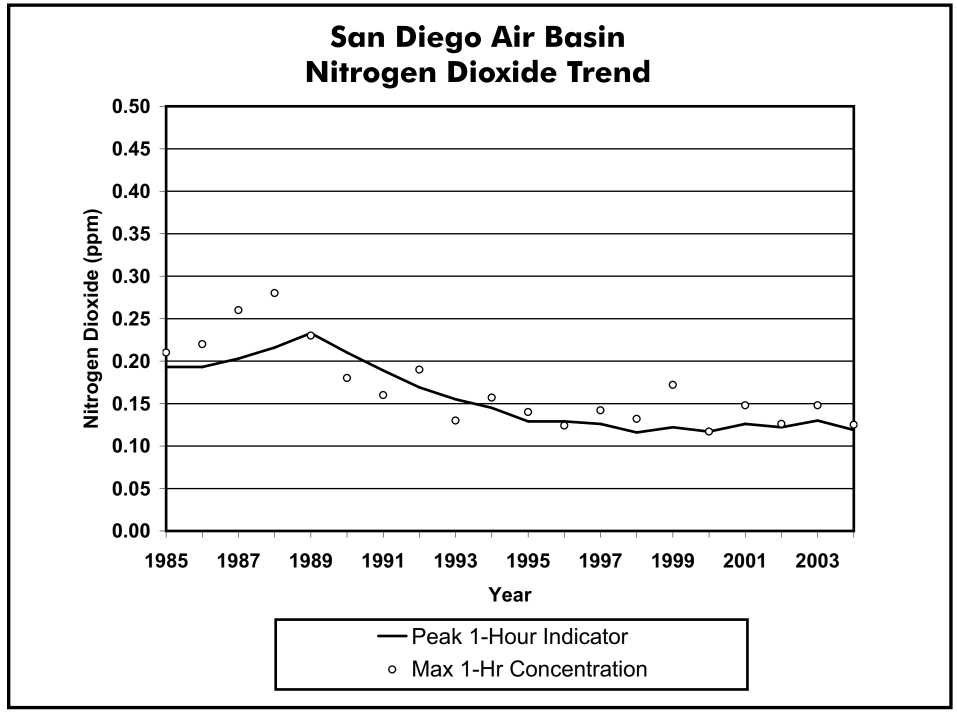

Figure 4-52

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.193	0.193	0.203	0.216	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119
Max. 1-Hr. Concentration	0.210	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125
Max. Annual Average	0.032	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023

Table 4-52

Sacramento Valley Air Basin

Introduction - Area Description

The Sacramento Valley Air Basin is home to California's capital. Located in the northern portion of the Central Valley, the Sacramento Valley Air Basin includes Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties, the western urbanized portion of Placer County, and the northeastern portion of Solano County. The Sacramento Valley Air Basin occupies 14,994 square miles and has a population of more than two million people.

Because of its inland location, the climate of the Sacramento Valley Air Basin is more extreme than the climate in the San Francisco Bay Area Air Basin or South Coast Air Basin. The winters are generally cool and wet, while the summers are hot and dry.

Emissions from the urbanized portion of the basin (Sacramento, Yolo, Solano, and Placer Counties) dominate the emission inventory for the Sacramento Valley Air Basin, and on-road motor vehicles are the primary source of emissions in the metropolitan area. While pollutant concentrations have generally declined over the years, additional regulations will be needed to attain the State and national ambient air quality standards in this air basin.

Figure 4-53

Sacramento Valley Air Basin

Emission Trends and Forecasts

The emission levels in the Sacramento Valley Air Basin are trending downward from 1990 to 2020 for NO_x, and downward from 1975 to 2020 for ROG and CO. The decreases in NO_x, ROG, and CO are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources are by far the largest contributors to NO_x, ROG, and CO emissions in the Sacramento Valley Air Basin. PM_{10} and $PM_{2.5}$ emissions are increasing from 1975 to 2020.

Sacramento Valley Air Basin Emissions (tons/day, annual average)										
Pollutant	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
NO_X	334	360	356	388	341	300	249	203	165	140
ROG	448	438	408	362	299	243	205	185	175	171
PM_{10}	197	203	209	221	212	219	226	232	238	243
PM_{25}	82	81	83	89	82	84	86	87	89	90
CO	2933	2942	2811	2475	1860	1439	1182	991	864	787

Table 4-53

Sacramento Valley Air Basin

Population and VMT

Between 1980 and 2020, population in the Sacramento Valley Air Basin is projected to grow at a higher rate than the statewide average- a 140 percent increase compared with a 93 percent increase statewide. Population is projected to grow from 15 million in 1980 to 36 million in 2020. During this same period, the increase in the number of vehicle miles traveled each day is projected to be higher than the overall statewide value: a 201 percent increase in the Sacramento Valley Air Basin. VMT are projected to increase from nearly 28 million miles in 1980 to 84 million miles in 2020.

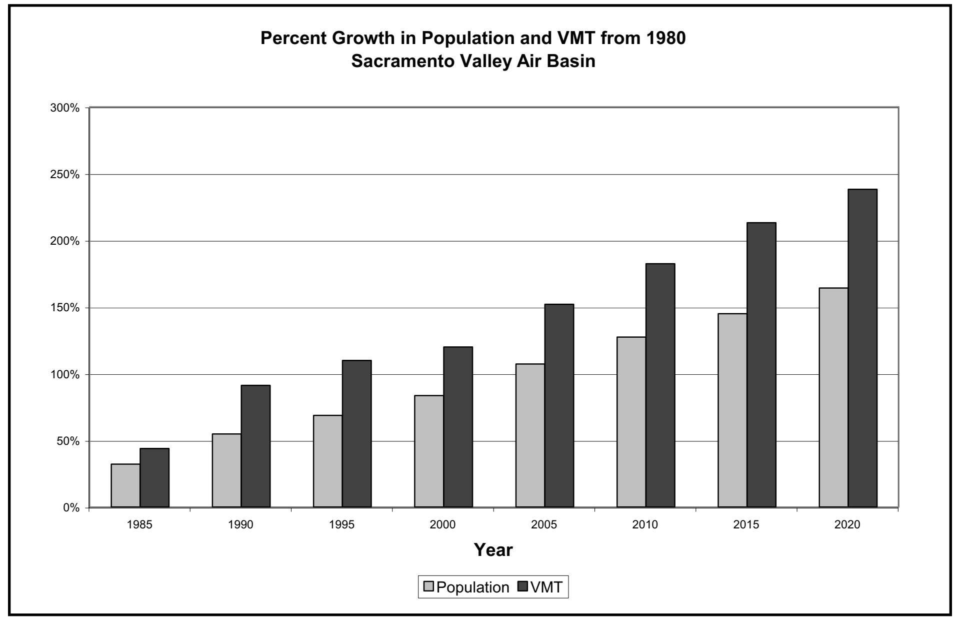

Figure 4-54

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1500924	1688217	1977625	2155511	2353221	2645098	2925202	3259235	3593262
Avg. Daily VMT/1000	27881	35762	47540	52178	54681	62630	70184	77831	84078

Table 4-54

Sacramento Valley Air Basin

Ozone Precursor Emission - Trends and Forecasts

Emissions of NO_x decreased from 1990 to 2005 and are projected to continue decreasing from 2005 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO_x emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO_x emissions. ROG emissions have been decreasing for the last 30 years due to more stringent motor vehicle standards and new rules for control of ROG from various industrial coating and solvent operations.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***334***	***360***	***356***	***388***	***341***	***300***	***249***	***203***	***165***	***140***
Stationary Sources	37	32	30	44	46	41	38	38	39	38
Area-wide Sources	9	9	9	10	9	9	9	9	9	9
On-Road Mobile	179	194	208	216	182	147	113	80	53	36
Gasoline Vehicles	147	148	143	132	112	78	54	38	25	18
Diesel Vehicles	32	46	65	84	70	68	59	43	27	18
Other Mobile	109	126	109	118	105	103	89	75	65	57
Gasoline Fuel	3	3	4	5	5	6	7	7	6	6
Diesel Fuel	103	119	101	109	95	92	77	63	53	44
Other Fuel	3	4	4	4	4	5	5	5	6	6

Table 4-55

ROG Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***448***	***438***	***408***	***362***	***299***	***243***	***205***	***185***	***175***	***171***
Stationary Sources	87	64	57	58	48	38	40	44	48	52
Area-wide Sources	59	66	65	73	69	66	63	65	67	69
On-Road Mobile	269	265	241	179	128	85	62	44	31	24
Gasoline Vehicles	267	262	237	175	125	83	59	42	30	23
Diesel Vehicles	2	3	4	4	3	3	2	2	1	1
Other Mobile	33	43	45	52	54	53	40	33	29	27
Gasoline Fuel	22	28	33	40	42	42	30	24	21	20
Diesel Fuel	9	10	9	9	8	8	7	5	4	3
Other Fuel	3	4	4	3	3	4	4	4	4	4

Table 4-56

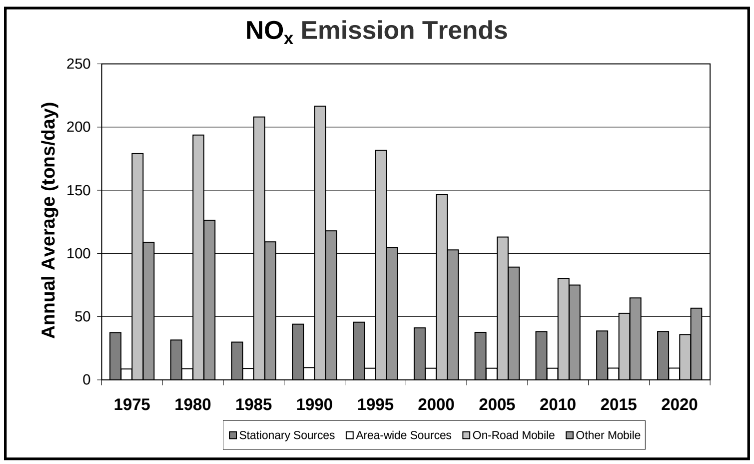

Figure 4-55

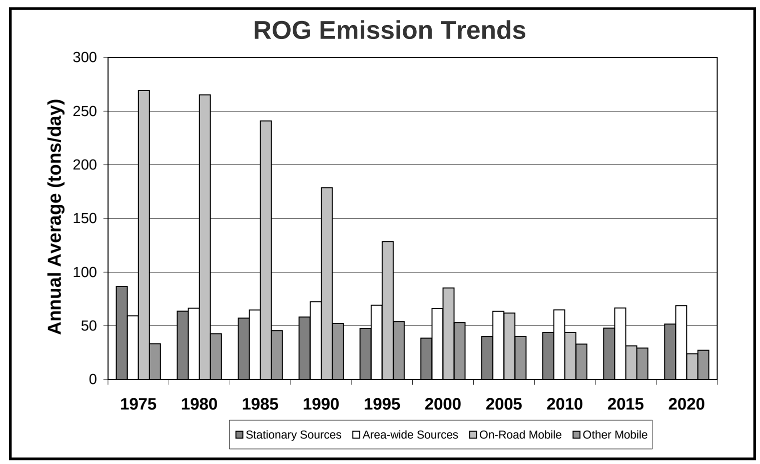

Figure 4-56

Sacramento Valley Air Basin

Ozone Air Quality Trend

Peak ozone values in the Sacramento Valley Air Basin have not declined as quickly over the last several years as they have in other urban areas. The maximum peak 8-hour indicator remained fairly constant from 1985 to 1989. Since 1989, the peak 8-hour indicator has decreased slightly, and the overall decline for the 20-year period is almost 14 percent. Looking at the number of days above the State and national standards, the trend is much more variable. However, the number of exceedance days has declined since 1988. The maximum measured 8-hour concentrations have also decreased, but with more year-to-year variation.

Similar to the San Joaquin Valley, the Sacramento Metropolitan area, which includes the urbanized portion of the Southern Sacramento Valley Air Basin, along with the urbanized portions of El Dorado and Placer Counties in the Mountain Counties Air Basin, is identified as both a transport contributor and receptor. The region is a transport contributor to the Mountain Counties, San Joaquin Valley, and San Francisco Bay Area Air Basins and is a receptor area for the San Francisco Bay Area and San Joaquin Valley Air Basins.

The data for the Sacramento Metropolitan Area, on the following page, reflects the portion of the region that is nonattainment for the national ozone standards.

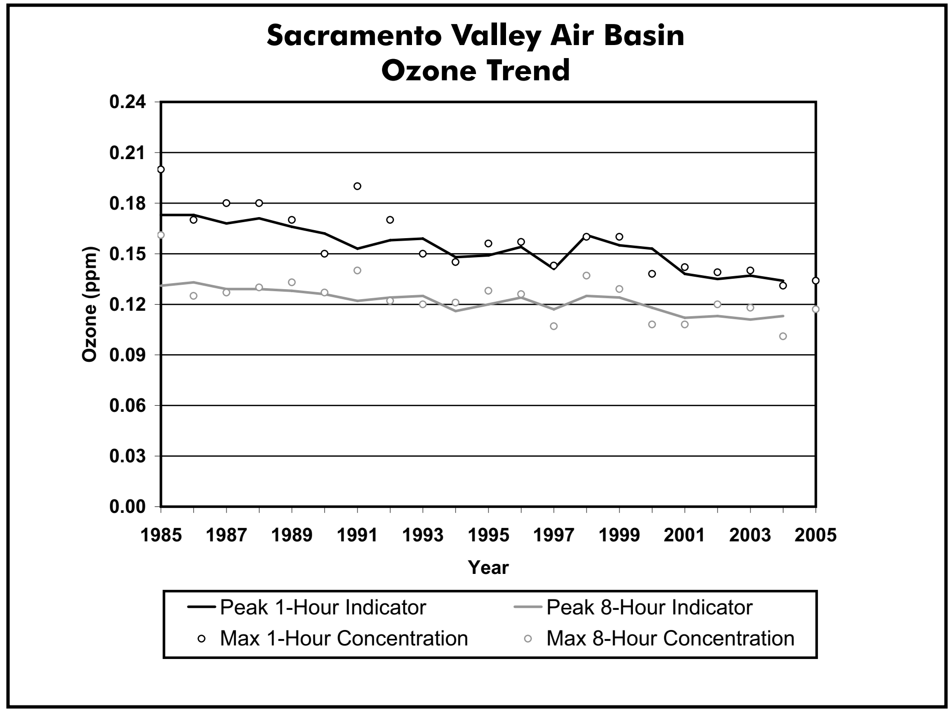

Figure 4-57

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005[1]
Peak 1-Hour Indicator	0.173	0.173	0.168	0.171	0.166	0.162	0.153	0.158	0.159	0.148	0.149	0.154	0.141	0.161	0.155	0.153	0.138	0.135	0.137	0.134	
Peak 8-Hour Indicator	0.131	0.133	0.129	0.129	0.128	0.126	0.122	0.124	0.125	0.116	0.120	0.124	0.117	0.125	0.124	0.118	0.112	0.113	0.111	0.113	
4th High 1-Hr. in 3 Yrs	0.180	0.180	0.160	0.160	0.160	0.160	0.150	0.150	0.150	0.143	0.145	0.145	0.133	0.148	0.148	0.148	0.133	0.132	0.138	0.138	
Avg. of 4th High 8-Hr. in 3 Yrs	0.118	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.097	0.097	0.101	0.105	0.101	0.101	0.100	0.097	
Maximum 1-Hr. Concentration	0.200	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.131	0.134
Max. 8-Hr. Concentration	0.161	0.125	0.127	0.130	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.101	0.117
Days Above State Standard	59	66	94	98	68	50	68	74	34	60	50	58	25	62	59	41	44	46	51	29	35
Days Above Nat. 1-Hr. Std.	19	24	24	35	8	16	14	14	7	9	11	9	3	14	7	5	2	7	5	1	3
Days Above Nat. 8-Hr. Std.	42	50	73	68	37	44	60	56	22	48	40	44	15	60	43	35	37	34	40	20	25

[1] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2004 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-57

Sacramento Metropolitan Area[1]

Ozone Air Quality Table

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Peak 1-Hour Indicator	0.173	0.173	0.168	0.171	0.166	0.162	0.153	0.158	0.159	0.148	0.149	0.154	0.141	0.161	0.155	0.153	0.139	0.143	0.146	0.143	
Peak 8-Hour Indicator	0.131	0.133	0.129	0.129	0.128	0.126	0.122	0.124	0.125	0.116	0.120	0.124	0.117	0.125	0.124	0.118	0.112	0.113	0.111	0.121	
4th High 1-Hr in 3 Yrs	0.180	0.180	0.160	0.160	0.160	0.160	0.150	0.150	0.150	0.143	0.145	0.145	0.133	0.148	0.148	0.148	0.133	0.143	0.143	0.142	
Avg of 4th Hi 8-Hr in 3 Yrs	0.118	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.107	
Maximum 1-Hr. Concentration	0.200	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.145	0.163	0.160	0.138	0.148	0.156	0.145	0.118	0.134
Max. 8-Hr. Concentration	0.161	0.125	0.127	0.138	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.113	0.109	0.137	0.122	0.102	0.117
Days Above State Standard	54	57	86	97	74	47	65	76	36	54	52	58	25	49	56	46	52	59	53	35	43
Days Above Nat. 1-Hr. Std.	19	23	22	35	9	14	14	14	7	9	11	11	4	13	7	7	3	10	6	0	4
Days Above Nat. 8-Hr. Std.	37	49	64	72	53	43	57	55	24	42	42	48	19	34	48	37	41	47	43	25	35

[1] The Sacramento Metropolitan Area includes urbanized portions of the Sacramento Valley Air Basin (Sacramento, Yolo, Placer, and Solano Counties, and part of Sutter County) and all of El Dorado and Placer Counties in the Mountain Counties Air Basin.

[2] Preliminary data for January through October 2005 are shown here, however they are subject to change. 2004 is the last year for which complete and approved data is available, thus annual statistics are not included.

Table 4-58

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Sacramento Valley Air Basin
Directly Emitted PM_{10} Emission Trends and Forecasts

Direct emissions of PM_{10} increased in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to continue increasing through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, fugitive dust from construction and demolition, and particulates from residential fuel combustion. Emissions of directly emitted PM_{10} from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The PM_{10} emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted PM_{10} emissions contribute approximately 75 percent of the ambient PM_{10} in the Sacramento Valley Air Basin.

Directly Emitted PM_{10} Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***197***	***203***	***209***	***221***	***212***	***219***	***226***	***232***	***238***	***243***
Stationary Sources	24	18	17	21	16	17	19	20	22	23
Area-wide Sources	163	173	181	187	185	192	197	202	208	212
On-Road Mobile	3	4	5	5	4	4	4	4	4	4
Gasoline Vehicles	1	1	1	2	2	2	2	3	3	3
Diesel Vehicles	2	2	3	4	2	2	1	1	1	1
Other Mobile	7	8	7	8	6	6	6	6	5	5
Gasoline Fuel	0	1	1	1	1	1	2	2	2	2
Diesel Fuel	6	7	6	7	5	5	4	4	3	2
Other Fuel	0	0	0	0	0	0	0	0	0	0

Table 4-59

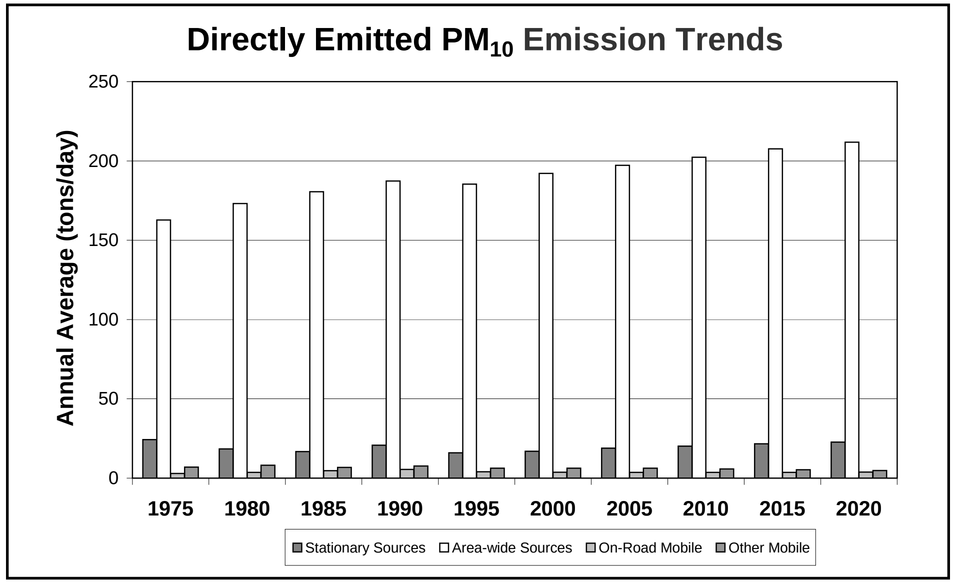

Figure 4-58

Sacramento Valley Air Basin
Directly Emitted $PM_{2.5}$ Emission Trends and Forecasts

Direct emissions of $PM_{2.5}$ increased slightly in the Sacramento Valley Air Basin between 1975 and 2005 and are projected to increase through 2020. Emissions are dominated by contributions from area-wide sources, primarily fugitive dust from paved and unpaved roads, fugitive dust from construction and demolition, and particulates from residential fuel combustion. Emissions of directly emitted $PM_{2.5}$ from mobile sources and stationary sources in the Sacramento Valley Air Basin have remained relatively steady.

Particulate matter can be directly emitted into the air (primary PM) or, similar to ozone, it can be formed in the atmosphere (secondary PM) from the reaction of gaseous precursors such as NO_x, SO_x, ROG, and ammonia. The $PM_{2.5}$ emission inventory includes only directly emitted particulate emissions. On an annual average basis, directly emitted $PM_{2.5}$ emissions contribute approximately 70 percent of the ambient $PM_{2.5}$ in the Sacramento Valley Air Basin.

Directly Emitted $PM_{2.5}$ Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***82***	***81***	***83***	***89***	***82***	***84***	***86***	***87***	***89***	***90***
Stationary Sources	18	12	11	13	10	10	12	12	13	14
Area-wide Sources	56	60	62	65	64	65	66	68	69	70
On-Road Mobile	2	3	4	4	3	3	3	2	2	2
Gasoline Vehicles	1	1	1	1	1	1	1	2	2	2
Diesel Vehicles	1	2	3	3	2	2	1	1	1	0
Other Mobile	6	7	6	7	6	6	6	5	5	4
Gasoline Fuel	0	0	1	1	1	1	1	1	2	2
Diesel Fuel	6	7	5	6	5	4	4	3	3	2
Other Fuel	0	0	0	0	0	0	0	0	0	0

Table 4-60

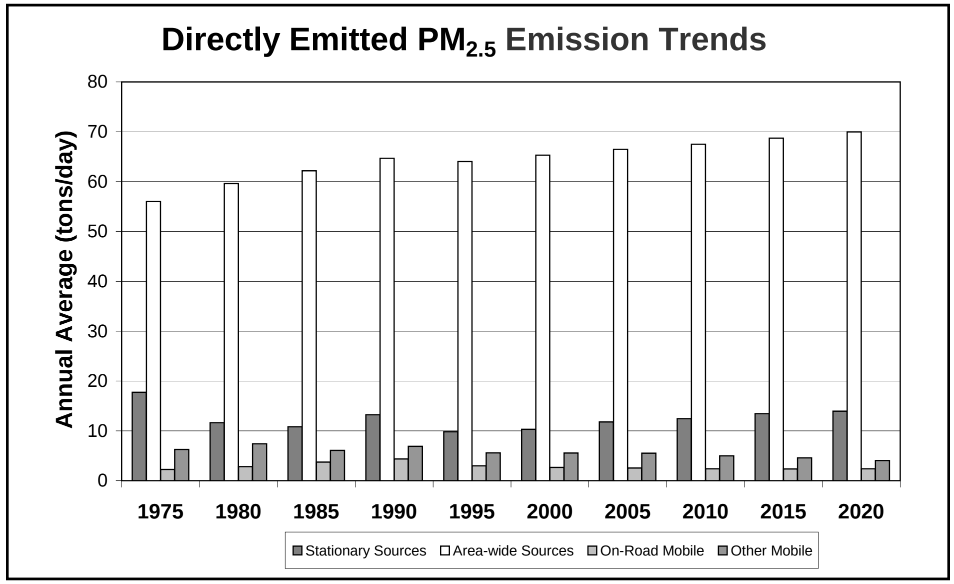

Figure 4-59

Sacramento Valley Air Basin

PM_{10} Air Quality Trend

The annual average (State) PM_{10} concentration in the Sacramento Valley Air Basin shows a fairly steady decline over the trend period, with some variability over the last several years. The three-year average of the annual average (State) shows a decrease of about 13 percent from 1989 to 2004. The three-year average of calculated days over the State 24-hour standard decreased by 21 percent from 1988 to 2004. Because many of the sources that contribute to ozone also contribute to PM_{10}, future ozone emission controls should improve PM_{10} air quality.

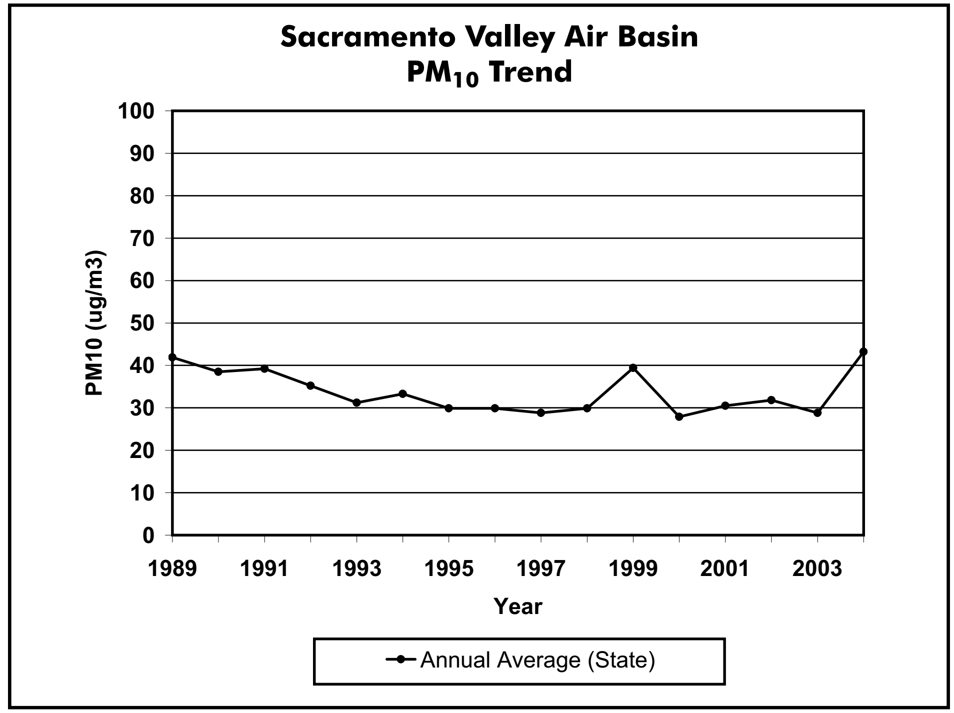

Figure 4-60

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				100	147	153	136	111	113	154	145	98	126	130	179	90	112	96	123	171
Max. 24-Hr. Concentration (Nat)				115	139	153	136	111	110	154	145	98	126	130	179	86	105	92	81	169
Annual Average (State)					41.9	38.5	39.2	35.2	31.2	33.3	29.9	29.9	28.8	29.9	39.4	27.9	30.5	31.8	28.8	43.2
Annual Average (Nat)				42.8	41.9	41.7	42.3	34.7	31.8	34.5	30.1	29.8	28.6	29.0	38.4	27.9	30.2	30.9	28.4	42.6
Calc Days Above State 24-Hr Std				183	134	175	189	177	92	108	108	129	65	97	144	81	102	126	66	195
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6

Table 4-61

Sacramento Valley Air Basin

$PM_{2.5}$ Air Quality Trend

Overall, annual average (national) $PM_{2.5}$ concentrations in the Sacramento Valley Air Basin decreased slightly during 1999 through 2004. The State annual average concentrations also show a declining trend, although the trends looks less pronounced, due to differences in State and national monitoring methods. The 98th percentile of 24-hour $PM_{2.5}$ concentrations also declined during this six-year period. Similar to PM_{10}, year-to-year changes in meteorology can mask the impacts of emission control programs. Several more years are needed before determining longer-term trends. Measures adopted as part of SB 656, as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region.

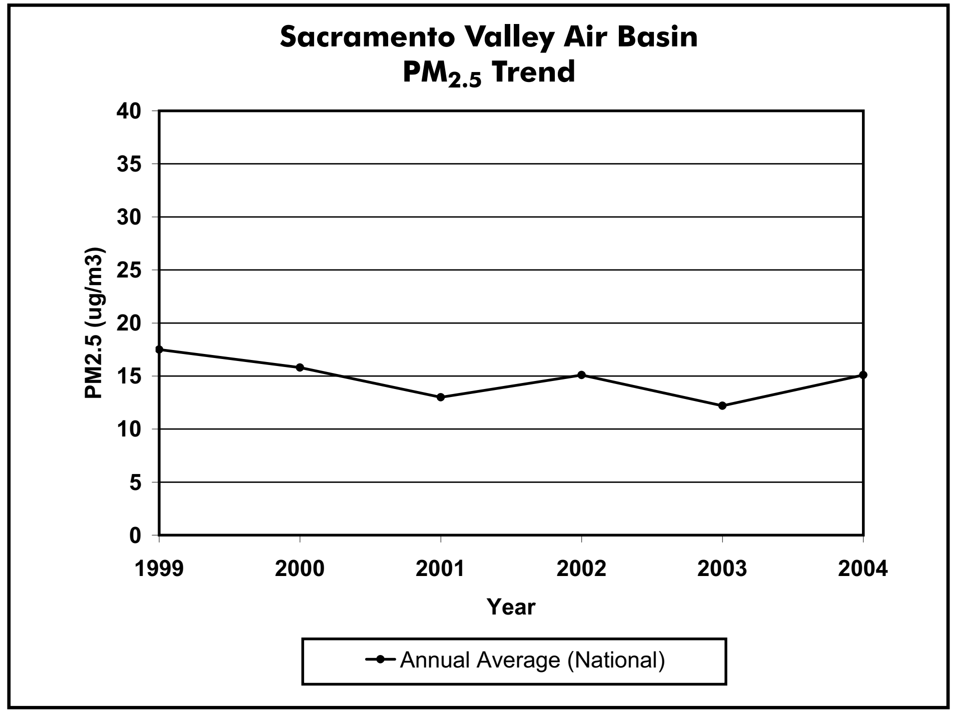

Figure 4-61

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														96.0	108.0	123.1	128.2	96.1	73.2	76.3
Max. 24-Hr. Concentration (Nat)														96.0	108.0	98.0	78.0	91.0	65.0	65.0
98th Percentile of 24-Hr Conc.														96.0	84.0	81.0	78.0	77.0	43.0	54.0
Annual Average (State)															17.5	15.8	11.9	15.1	15.9	16.5
Avg. of Qtrly. Means (Nat)															17.5	15.8	13.0	15.1	12.2	15.1

Table 4-62

Sacramento Valley Air Basin
Carbon Monoxide Emission Trends and Forecasts

Emissions of CO declined in the Sacramento Valley Air Basin between 1980 and 2005 and are projected to decrease through 2020. Motor vehicles are the largest source of CO emissions. With the introduction of new automotive emission controls to meet more stringent emission standards, motor vehicle CO emissions have been declining since 1975, despite increases in VMT. Stationary and area-wide source CO emissions have remained relatively steady since 1990, with additional emission controls offsetting growth.

CO Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***2933***	***2942***	***2811***	***2475***	***1860***	***1439***	***1182***	***991***	***864***	***787***
Stationary Sources	28	28	16	51	39	41	48	50	54	56
Area-wide Sources	252	265	275	286	283	282	284	286	288	292
On-Road Mobile	2450	2389	2246	1813	1225	822	576	398	268	187
Gasoline Vehicles	2442	2377	2228	1793	1210	808	565	389	260	180
Diesel Vehicles	8	12	17	20	16	13	12	9	8	7
Other Mobile	204	261	274	326	313	294	273	257	254	251
Gasoline Fuel	147	192	215	262	255	240	221	205	202	201
Diesel Fuel	36	44	37	42	36	31	28	26	25	23
Other Fuel	21	25	22	22	22	23	25	26	27	27

Table 4-63

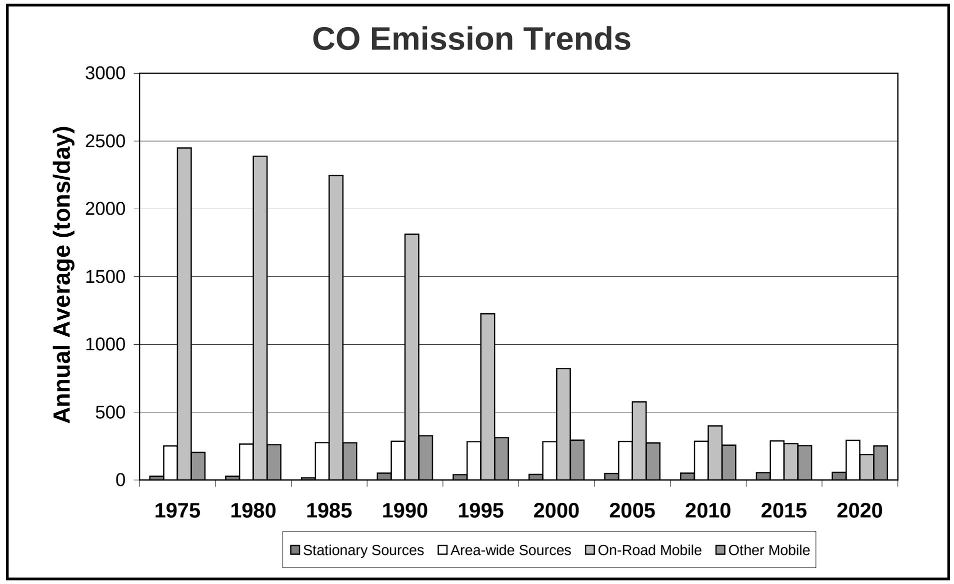

Figure 4-62

Sacramento Valley Air Basin

Carbon Monoxide Air Quality Trend

The trend of the maximum peak 8-hour indicator for carbon monoxide for the Sacramento Valley Air Basin was relatively flat from 1985 to 1991, with some year-to-year variability that was probably caused by meteorology. Since 1991, indicator values have decreased substantially. The 2004 value was 71 percent lower than the 1991 value. The national CO standards have not been exceeded since 1991, and the State standards were last exceeded in 1993. Much of the decline in ambient carbon monoxide concentrations is attributable to the introduction of cleaner fuels and newer, cleaner motor vehicles. These controls will help keep the area in attainment for both the State and national CO standards.

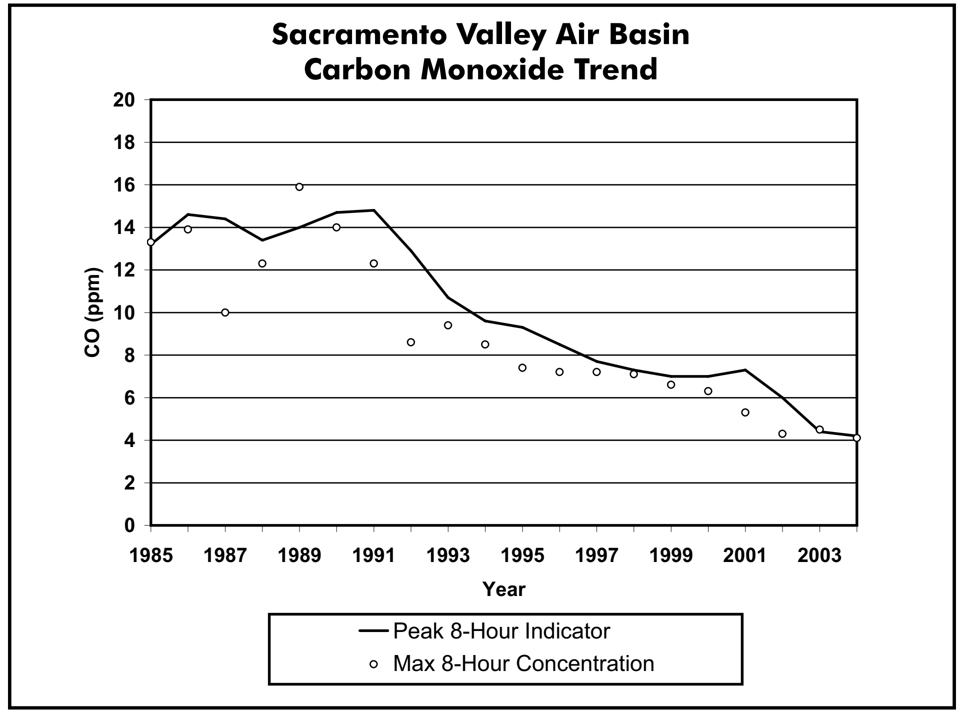

Figure 4-63

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.2	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2
Max. 1-Hr. Concentration	17.0	20.0	15.0	17.0	18.0	17.0	15.0	14.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	17.2	7.8	8.5	7.3
Max. 8-Hr. Concentration	13.3	13.9	10.0	12.3	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1
Days Above State 8-Hr. Std.	12	13	5	12	22	14	9	0	2	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	12	12	3	9	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4-64

Sacramento Valley Air Basin
Nitrogen Dioxide
Oxides of Nitrogen Emission Trends and Forecasts

Emissions of NO_x show a steady decrease from 1990 to 2020. On-road motor vehicles and other mobile sources are by far the largest contributors to NO_x emissions. More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO_x emissions.

NO_x Emission Trends (tons/day, annual average)										
Emission Source	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
All Sources	***334***	***360***	***356***	***388***	***341***	***300***	***249***	***203***	***165***	***140***
Stationary Sources	37	32	30	44	46	41	38	38	39	38
Area-wide Sources	9	9	9	10	9	9	9	9	9	9
On-Road Mobile	179	194	208	216	182	147	113	80	53	36
Gasoline Vehicles	147	148	143	132	112	78	54	38	25	18
Diesel Vehicles	32	46	65	84	70	68	59	43	27	18
Other Mobile	109	126	109	118	105	103	89	75	65	57
Gasoline Fuel	3	3	4	5	5	6	7	7	6	6
Diesel Fuel	103	119	101	109	95	92	77	63	53	44
Other Fuel	3	4	4	4	4	5	5	5	6	6

Table 4-65

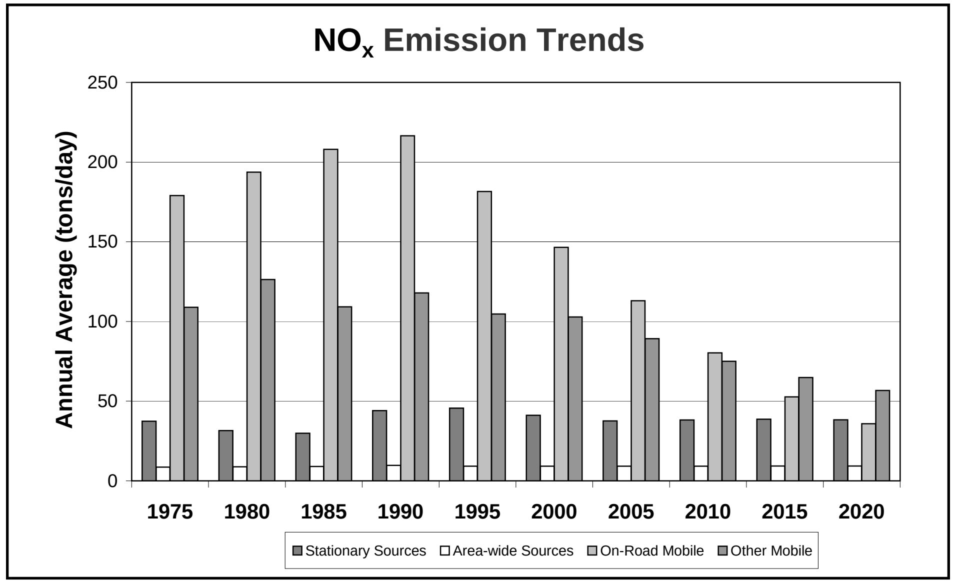

Figure 4-64

Sacramento Valley Air Basin

Nitrogen Dioxide Air Quality Trend

The Sacramento Valley Air Basin has attained both the State and national nitrogen dioxide standards for more than twenty years. The peak 1-hour indicator increased from 1984 through 1993, but has declined by almost 28 percent since 1993. There is more variability in maximum 1-hour concentrations as compared to other areas. This variability may be due to changes in emission sources and may also reflect year-to-year changes in meteorology. However, ambient concentrations are well below the level of the two standards, and a decline in NO_2 concentrations is expected in the coming years.

Nitrogen dioxide is formed from emissions of oxides of nitrogen, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's oxides of nitrogen emissions.

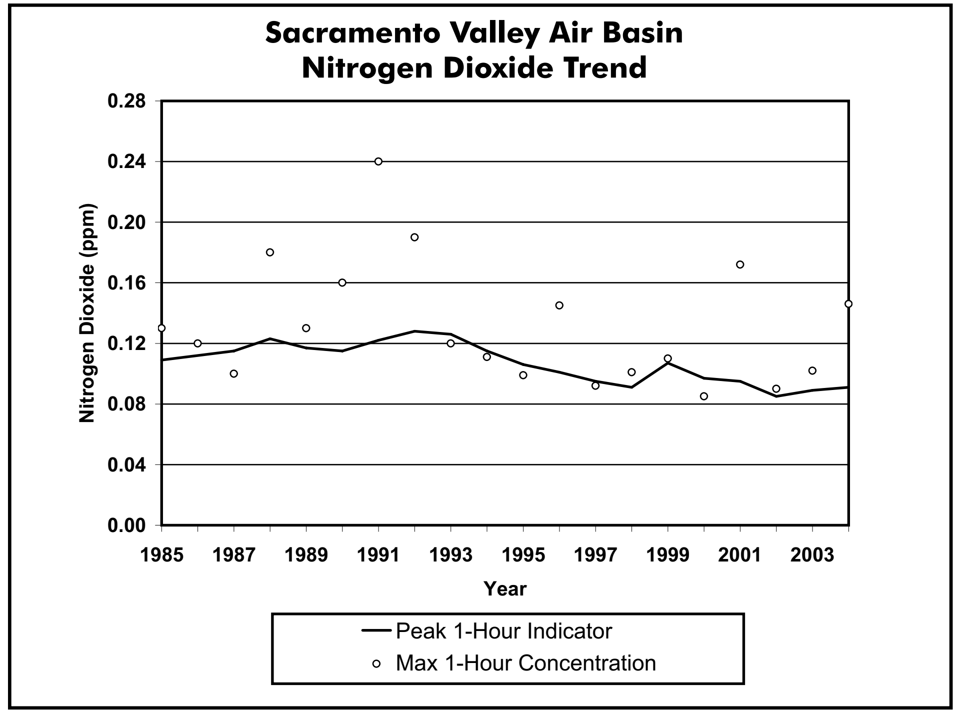

Figure 4-65

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.109	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.095	0.091	0.107	0.097	0.095	0.085	0.089	0.091
Max. 1-Hr. Concentration	0.130	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.172	0.090	0.102	0.146
Max. Annual Average	0.021	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.017	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017

Table 4-66

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Chapter 5

Toxic Air Contaminant Emissions, Air Quality, and Health Risk

Introduction

This chapter presents a summary of the emissions and air quality data available for selected toxic air contaminants, or TACs. The Health and Safety Code defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. There are almost 200 compounds that have been designated as TACs in California. Some of these TACs are groups of compounds which contain many individual substances (e.g., copper compounds, polycyclic aramatic compounds). The summary information includes available data for the ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data. These TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Besides the ten selected TACs, dioxins are also considered to pose substantial health risk, and a brief discussion on dioxins is presented in this introduction.

Chapter 5 is organized in three major sections. Its introduction provides general information on toxic air contaminants, their emissions, and air quality. Information for the ten selected TACs is summarized for the State as a whole and for each of the five most populous air basins, which are the South Coast Air Basin, the San Francisco Bay Area Air Basin, the San Joaquin Valley Air Basin, the San Diego Air Basin, and the Sacramento Valley Air Basin. The second section provides summaries of statewide emissions, annual average concentrations (calculated as a mean of the monthly means), and average health risks for the ten selected TACs. The third section provides similar information for California's five most populous air basins. Tables of concentration and health risk data for the ten TACs are presented in Appendix C for the State as a whole, each of the five most populous air basins, and for individual sites within these air basins.

It is important to note that the summarized data reflect a spatial average, and ambient concentrations and health risks for individual locations may be higher or lower. In addition, the ambient concentration and health risk information presented here reflect data collected only at sites operated by the ARB, and the information presented in this chapter reflects only the ten TACs for which available data indicate the most substantial health risk. There may be other TACs that pose a substantial risk, but for which sufficient data are not available, or which have not been identified as a concern. Additional information on interpreting air quality data for toxic air contaminants can be found in Chapter 1.

Sources of Toxic Air Contaminant Emissions in California. Similar to the criteria pollutants, toxic air contaminants are emitted from stationary sources, area-wide sources, and mobile sources. The stationary source emissions inventory was developed by the ARB in cooperation with affected industries and the air pollution control and air quality management districts (districts) as part of Assembly Bill 2588, the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Program). The ARB developed the emission estimates for area-wide sources and mobile sources.

Emissions of the selected TACs are reported on a statewide basis and for the ten highest-emitting counties in California. Emissions are also included for the five most populous air basins. In general, the inventory base year is 2005. Note, however, that the stationary source emissions inventory uses the best available information for the emission source, although the data may not have been specifically collected for 2005.

Air Quality Monitoring for Toxic Air Contaminants. The ARB maintains a statewide air quality monitoring network for toxic air contaminants. The network was originally designed to measure selected substances in the ambient air to determine if levels were sufficiently high to be of concern. As a result of this monitoring, the ARB has determined atmospheric concentrations for over 60 individual substances. As shown in Figure 5-1, the ARB currently maintains a network of 17 air quality monitoring stations, measuring ambient concentrations of 64 substances. The number of sites is smaller than in previous years and reflects the closure of several sites during 2000. By closing these sites, additional resources were made available to support monitoring for the ARB community health program. The sites selected for closure generally showed concentrations similar to the statewide average, so their closure has a small overall impact on the statewide annual averages. Other factors considered in selecting sites for closure included the total number of sites in the area and the continuity of the data record.

TAC samples are generally collected once every 12 days, throughout the year. This results in 20,000 to 35,000 individual TAC measurements annually. The TAC data are typically sampled, analyzed, and reported as 24-hour averages. These 24-hour averages provide the basis for the annual average concentrations. The annual average concentrations are then used to support statewide risk assessment.

The ambient TAC air quality trends included in this chapter are based on ambient data collected during 1990 through 2004 except for diesel PM. There are no diesel PM ambient monitoring data because no generally accepted method currently exists. However, the ARB has made some estimates of ambient diesel PM concentrations, based on receptor modeling techniques. These estimates are included for comparison.

To minimize the influences of weather on the trends, three-year average statewide concentrations were used to assess changes in individual TACs over time. The trend is determined by comparing the resulting averages from the beginning and end of the monitoring period. For about half of the ten TACs, the baseline average concentration is for 1990-1992, and the current average concentration is for 2002-2004. However, acetaldehyde and formaldehyde data collected prior to 1996 are underestimated, so their respective baseline average concentration is for 1996-1998. For hexavalent chromium and *para*-dichlorobenzene, monitoring data were available starting in 1992 and

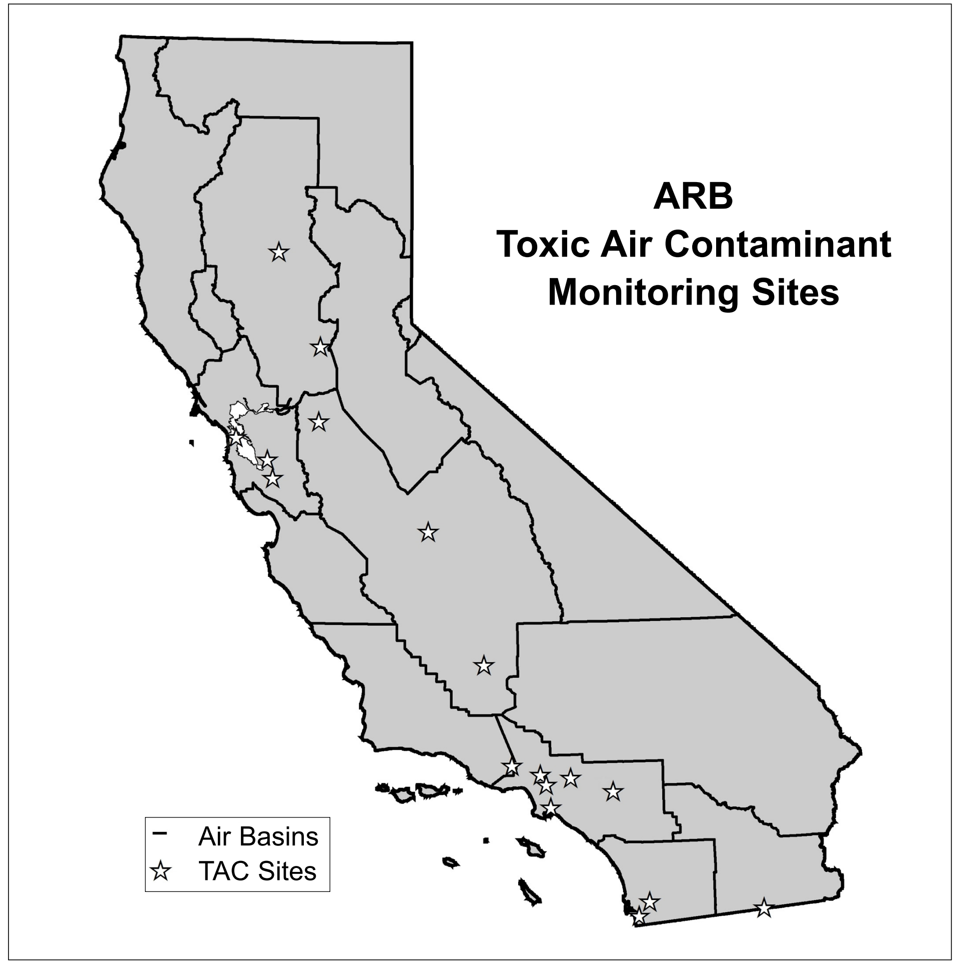

Figure 5-1

1991, so their baseline averages are for 1992-1994 and 1991-1993, respectively.

Statewide Health Risk and Community Health. In this almanac, health risk is presented on a pollutant-by-pollutant basis and on a cumulative basis, with a focus on cancer risk. The cancer risk estimates are calculated using an annual average concentration calculated as an average of the monthly means multiplied by a unit risk factor. The unit risk factor is expressed as the probability, or risk, of contracting cancer as a result of constant exposure to an ambient concentration of one microgram per cubic meter for 70 years. The potential impacts for cancer are expressed as the risk of contracting cancer (or excess cancer cases) per million people exposed over a 70-year period. Table 5-1 lists the unit risk factor and the limit of detection (LOD) for each of the ten TACs presented in this almanac. LOD is the lowest concentration of a substance that can be reliably measured, and measurements below the LOD are assumed to be one-half of the LOD. The unit risk factors reflect only the inhalation pathway. The TAC monitoring network is designed to provide air quality data in support of general population exposures. Therefore, the data do not provide information on localized impacts, often referred to as near-source or neighborhood exposures.

Localized impacts may involve exposure to different toxic air contaminants with higher or lower concentrations than those represented by the ambient air monitoring data. The ARB participated in several studies to address localized impacts and community health issues. For example, during October 1999, the ARB initiated a monitoring and evaluation study in the Barrio Logan and Logan Heights neighborhoods of San Diego. In addition, the ARB has conducted monitoring in five other communities in support of the community health program as required by SB 25. Efforts such as these will supplement our existing statewide TAC monitoring network, which was designed for regional rather than neighborhood assessments. Information on these and other studies is available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

Monitoring for Dioxins. Dioxins and furans, collectively referred to as dioxins, are a group of chemicals with similar structures and chemical properties. When found in the environment, dioxins are usually a mixture of these chemicals. Dioxins are byproducts of various industrial and combustion activities, and they can be emitted from vehicles, waste incineration, chemical manufacturing plants, and forest fires. Once released into the environment, dioxins are highly persistent and can accumulate in the tissues of animals and humans.

Dioxins can be inhaled directly, and they can also accumulate in the body from eating dioxins-contaminated vegetation or animals that have eaten such vegetation. Many studies have shown that dioxins can cause cancer and other health problems including birth defects and liver damage.

Toxic Air Contaminant Unit Risk Factors

Toxic Air Contaminant	Unit Risk/Million People*	Limit Of Detection (ppb)
Acetaldehyde	2.7	0.10
Benzene	29	0.05
1,3-Butadiene	170	0.04
Carbon Tetrachloride	42	0.02
Chromium, Hexavalent	150,000	0.06**
para-Dichlorobenzene	11	0.30
Formaldehyde	6	0.10
Methylene Chloride	1	0.10
Perchloroethylene	5.9	0.01
Diesel Particulate Matter	300***	N/A

* The Unit Risk represents the number of excess cancer cases per million people per microgram per cubic meter TAC concentration over a 70-year, lifetime exposure.
** The unit for hexavalent chromium is nanograms per cubic meter.
*** A diesel particulate matter unit risk value of 300 is used as a reasonable estimate in the *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles"* (ARB, October 2000).

Table 5-1

The ARB has identified dioxins as a TAC, and U.S. EPA has listed them as hazardous air pollutants. In 1990, the ARB adopted a control measure to reduce emissions of dioxins from medical waste incinerators by 99 percent. At the time, medical waste incinerators were one of the largest known air sources of dioxins in California. As a result of the control measure, the number of medical incinerators in the State dropped sharply, from about 150 to less than 10.

In order to provide information on ambient levels of dioxins and dioxin-like compounds, the ARB has developed the California Ambient Dioxin Air Monitoring Program (CADAMP). This program is modeled, in part, after the U.S. Environmental Protection Agency's National Dioxin Air Monitoring Network (NDAMN) to ensure the data from the two networks can be used interchangeably. The two networks use the same sampling and analytical techniques; however, CADAMP focuses on dioxins sampling in urban areas while NDAMN emphasizes rural areas nationwide. Ten sampling sites have been deployed in CADAMP, five in the San Francisco Bay Area, four in the South Coast Air Basin, and one in Sacramento. The monitoring started in December 2001, and it will end in July/August 2006. Several of the CADAMP sites are also part of the ARB's Children's Environmental Health Protection Program (SB25). Preliminary data collected as part of this program are currently being analyzed. Data from 2002 and 2003 are available at *www.arb.ca.gov/aqa/dioxin/cadamp.html*. Data from 2004 are expected to be available in early 2006. General information on ARB's dioxins program is available at *www.arb.ca.gov/toxics/dioxins/dioxins.htm*.

Additional Information. Additional emissions and air quality data for the ten TACs in this almanac, as well as many other TACs, may be found by accessing the ARB website at *www.arb.ca.gov/html/aqe&m.htm.* The web data are updated periodically, as new information becomes available. More detailed information on the health effects of these compounds, as well as other TACs, can be found in an ARB report entitled: *"Toxic Air Contaminant Identification List - Summaries,"* dated September 1997. This report can be obtained from the ARB Public Information Office at (916) 322-2990 or by accessing the ARB website at *www.arb.ca.gov/toxics/id/id.htm*.

Acetaldehyde

2005 Statewide Emission Inventory

Acetaldehyde is a federal hazardous air pollutant (HAP). The ARB identified acetaldehyde as a TAC in April 1993 under Assembly Bill 2728. This bill required the ARB to identify all federal HAPs as TACs. In California, acetaldehyde is identified as a carcinogen. This compound also causes chronic non-cancer toxicity in the respiratory system.

Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. In California, photochemical oxidation is the largest source of acetaldehyde concentrations in the ambient air. Approximately 24 percent of the statewide acetaldehyde emissions can be attributed to on-road motor vehicles, with an additional 51 percent attributed to other mobile sources such as construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area-wide sources of emissions, which contribute 22 percent of the statewide acetaldehyde emissions, include the burning of wood in residential fireplaces and wood stoves. Stationary sources contribute three percent of the statewide acetaldehyde emissions. The primary stationary sources are manufacturers of miscellaneous food and kindred products and crude oil and natural gas extraction. The emissions from these sources are from fuel combustion.

Acetaldehyde		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	230	3%
Area-wide Sources	1660	22%
On-Road Mobile	1866	24%
Gasoline Vehicles	905	12%
Diesel Vehicles	960	13%
Other Mobile	3919	51%
Gasoline Fuel	977	13%
Diesel Fuel	2262	29%
Other Fuel	680	9%
Natural Sources	0	0%
Total Statewide	***7675***	***100%***

Table 5-2

2005 Top Ten Counties - Acetaldehyde

The top ten counties account for approximately 46 percent of the statewide acetaldehyde emissions. The South Coast Air Basin has four of the top ten counties: South Coast portion of Los Angeles County (13 percent of the emissions of acetaldehyde statewide), Orange County (four percent), South Coast portion of San Bernardino County (three percent), and South Coast portion of Riverside County (three percent). Collectively, approximately 23 percent of statewide acetaldehyde emissions occur in the South Coast Air Basin. San Diego County accounts for approximately six percent. The five other counties in the top ten for acetaldehyde emissions are: Alameda, Santa Clara, Fresno, Sacramento and Kern (San Joaquin Valley portion). These five counties account for approximately 17 percent of statewide acetaldehyde emissions.

Acetaldehyde			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	992	13%
San Diego	San Diego	497	6%
Alameda	San Francisco Bay Area	334	4%
Orange	South Coast	325	4%
Santa Clara	San Francisco Bay Area	270	4%
Fresno	San Joaquin Valley	251	3%
Sacramento	Sacramento Valley	232	3%
San Bernardino	South Coast	214	3%
Riverside	South Coast	213	3%
Kern	San Joaquin Valley	193	3%

Table 5-3

Acetaldehyde

Statewide Air Quality and Health Risk

The ARB routinely monitors ambient acetaldehyde concentrations throughout its network of toxic monitoring sites. Figure 5-2 presents a trend graph for acetaldehyde for the years 1990 through 2004. The graph shows a general downward trend in acetaldehyde levels with greater variation during 1990-2000 than in 2000-2004. There is a sharp drop in acetaldehyde levels during 1995 and a corresponding increase the following year. Levels between 2000 and 2004 show very little variation although there is a gradual swing between 2000 and 2003.

Although data are shown for all years during 1990 through 2004, the values prior to 1996 are uncertain because the ARB analyzed ambient samples using a method that underestimated the actual concentrations. A method change in 1996 corrected this bias; however, the ARB was unable to develop a correction factor for the earlier data. Although the concentrations and health risk values for years prior to 1996 are lower than expected, they are not directly comparable to data collected during the later years. The data prior to the method change are included here for completeness.

The acetaldehyde trend is based on monitoring data. To minimize the influences of weather on the trend, three-year average statewide concentrations are used to assess the change over time. To do this, the resulting averages at the beginning and the end of the monitoring period were compared. Although acetaldehyde data were collected beginning in 1990, as noted above, data prior to 1996 were unreliable. Therefore, the period 1996-1998 was used as the baseline average for comparison to 2002-2004. The result shows a three percent decrease in acetaldehyde concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2004, there was an estimated five excess cancer cases per million people due to acetaldehyde. On an individual basis, the health risks from acetaldehyde are much lower than they are for some of the other toxic air contaminants. Among the ten compounds presented in this almanac, the health risk from acetaldehyde ranks eighth.

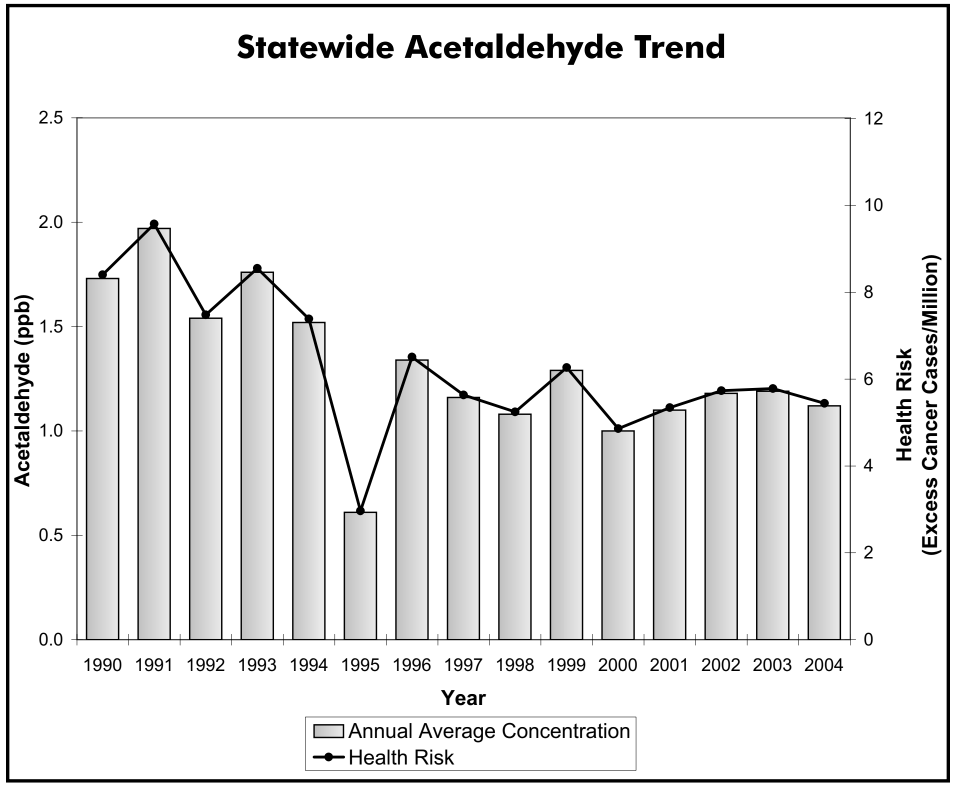

Figure 5-2

It is important to note that the health risk due to acetaldehyde is not spread evenly throughout the State. This is common for almost all pollutants. The data reflect statewide averages, and do not consider local impacts. Therefore, some Californians may be exposed to near-source, or "hot spot" concentrations of acetaldehyde which are above the statewide annual average concentration. “Hot spot” exposure may increase the potential cancer risk to individuals living near large combustion sources. Information collected under Assembly Bill 2588 (the Air Toxics “Hot Spots” Program) will be used to help determine the priority and need for control of sources of acetaldehyde.

Another factor to consider is that the statewide averages reflect ambient outdoor concentrations. In general, acetaldehyde concentrations are higher indoors than outdoors, due in part to the abundance of combustion sources, such as cigarettes, fireplaces, and woodstoves.

Acetaldehyde is directly emitted and also occurs in the environment as a result of the photochemical oxidation of reactive organic gases (ROG). Over the years, stringent emission standards for new vehicles have resulted in steady declines in directly emitted acetaldehyde due to vehicular emissions. However, its secondary formation can be hard to quantify, and can contribute to fluctuations in ambient levels of acetaldehyde.

Benzene

2005 Statewide Emission Inventory

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985 under California's TAC program (Assembly Bill 1807). In addition to being a carcinogen, benzene also has non-cancer health impacts. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Current estimates show that approximately 85 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. The predominant sources of total benzene emissions in the atmosphere are gasoline fugitive emissions and gasoline motor vehicle exhaust. Approximately 49 percent of the statewide benzene emissions can be attributed to on-road motor vehicles, with an additional 36 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and lawn and garden equipment. Currently, the benzene content of gasoline is less than one percent. Some of the benzene in the fuel is emitted from vehicles as unburned fuel. Benzene is also formed as a partial combustion product of larger aromatic fuel components. Industry-related stationary sources contribute 13 percent and area-wide sources contribute one percent of the statewide benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation. The primary area-wide sources include residential combustion of various types such as cooking and water heating. The primary natural sources are petroleum seeps that form where oil or natural gas emerge from subsurface sources to the ground or water surface.

Benzene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1658	13%
Area-wide Sources	123	1%
On-Road Mobile	6041	49%
Gasoline Vehicles	5779	47%
Diesel Vehicles	261	2%
Other Mobile	4426	36%
Gasoline Fuel	3484	28%
Diesel Fuel	615	5%
Other Fuel	327	3%
Natural Sources	46	0%
Total Statewide	***12293***	***100%***

Table 5-4

2005 Top Ten Counties - Benzene

The top ten counties account for approximately 55 percent of the statewide benzene emissions. The South Coast Air Basin has four of the top ten counties emitting benzene: South Coast portion of Los Angeles County (17 percent of the emissions of benzene statewide), Orange County (six percent), South Coast portion of San Bernardino County (three percent), and South Coast portion of Riverside County (three percent). Collectively, approximately 29 percent of statewide benzene emissions occur in the South Coast Air Basin. Two counties in the San Francisco Air Basin contribute approximately seven percent: Santa Clara County (four percent) and Alameda County (three percent). The four other counties in the top ten for benzene emissions are: San Diego, Kern, Sacramento and Santa Barbara. These four counties account for approximately 19 percent of statewide benzene emissions.

Benzene			
County	Air Basin	tons/year	Percent
Los Angeles	South Coast	2141	17%
San Diego	San Diego	849	7%
Kern	San Joaquin Valley	742	6%
Orange	South Coast	726	6%
Santa Clara	San Francisco Bay Area	467	4%
Alameda	San Francisco Bay Area	400	3%
San Bernardino	South Coast	383	3%
Riverside	South Coast	356	3%
Sacramento	Sacramento Valley	343	3%
Santa Barbara	South Central Coast	341	3%

Table 5-5

Benzene

Statewide Air Quality and Health Risk

The ARB has routinely monitored benzene concentrations in the ambient air for more than a decade. To examine the trend in benzene while minimizing the influences of weather on the trend, the statewide average benzene concentration for 1990-1992 was compared to that for 2002-2004. The result is a 74 percent decrease in both concentration and health risk. Figure 5-3 shows the annual average statewide benzene concentrations and the associated health risk from benzene alone. Ambient levels have shown generally steady improvement since 1990.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration level over a 70-year lifetime. From these data, it is apparent that benzene poses a substantial health risk. Based on the statewide averages, benzene ranks second highest among the ten TACs presented in this almanac. During 2004, there was an estimated risk of 43 excess cancer cases per million people due to benzene. However, as with all air pollutants, the health risk is not spread evenly throughout the State. In some areas, the health risk is higher than the statewide average, while in other areas the health risk is lower. In general, ambient benzene concentrations and associated health risks tend to be higher in the more urbanized areas.

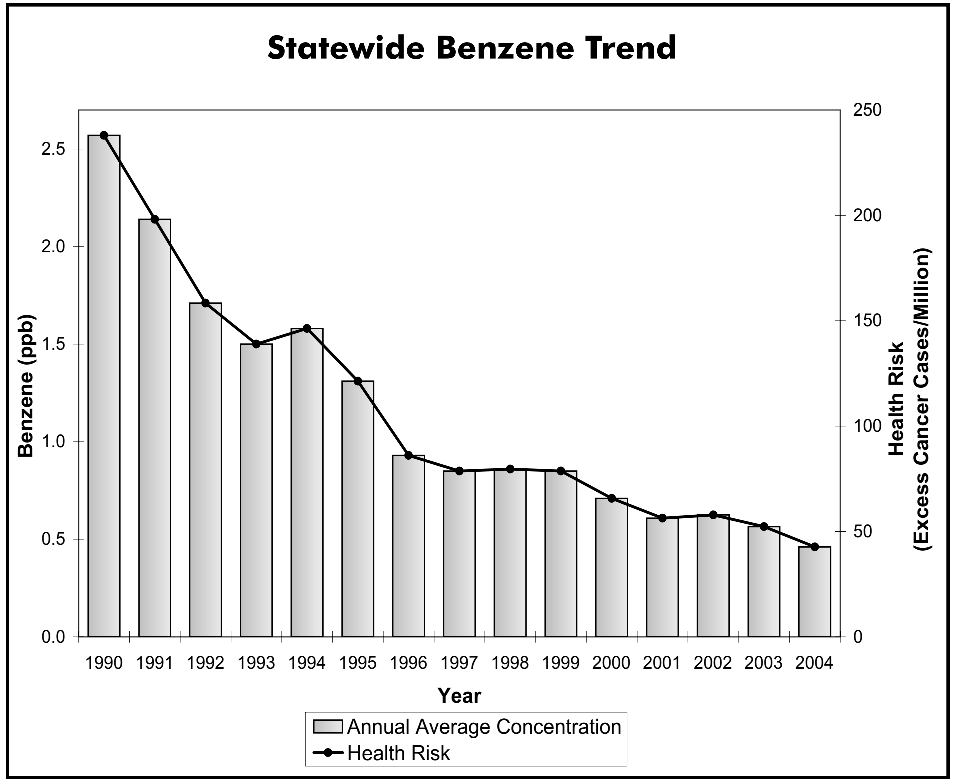

Figure 5-3

It is important to note that the ambient benzene concentrations have been corrected to provide a consistent long-term data record. Prior to 1999, the ARB analyzed samples using a single-point calibration of the gas chromatograph analyzers. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient benzene, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year long study showed that the two measurement methods were highly correlated, and the ARB was able to develop a predictive relationship between the two. To avoid discontinuity in the trend data, the pre-1999 benzene data shown in Figure 5-3 have been adjusted according to these predictive equations, and they now reflect the results that would have been produced using the 3-point calibration method. Information about the specific study process and adjustment equations can be found on the "Laboratory Standard Operating Procedures for Ambient Air" page on the ARB website at *www.arb.ca.gov/aaqm/sop/summary/summary.htm.*

The ARB started to use a gas chromatography/mass spectrometry based method to analyze benzene in 2001 to fulfill a lower detection limit requirement for the SB 25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally. Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

Although the health risk from benzene is still substantial, emissions have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures and control technologies. The Low Emission Vehicle (LEV) regulations have resulted in a significant reduction in exhaust and evaporative hydrocarbon emissions, including benzene. As the fleet turns over and new LEV technology vehicles are introduced into the fleet, emission reductions will continue. In 1996, the California Phase II Reformulated Gasoline Program was implemented statewide. Fuel reformulation has led to a substantial decrease in the level of benzene from gasoline and vehicle exhaust emissions. Since motor vehicles continue to be the major source of benzene in the State, future efforts to improve fuel formulations, reduce vehicle exhaust emissions, and promote less polluting modes of transportation will likely continue to help reduce benzene emissions.

1,3-Butadiene

2005 Statewide Emission Inventory

The ARB identified 1,3-butadiene as a TAC in 1992. In California, 1,3-butadiene has been identified as a carcinogen. In addition, 1,3-butadiene vapors are mildly irritating to the eyes and mucous membranes and cause neurological effects at very high levels.

Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for approximately 85 percent of the total statewide emissions. Vehicles that are not equipped with functioning exhaust catalysts emit greater amounts of 1,3-butadiene than vehicles with functioning catalysts. Approximately 45 percent of the statewide 1,3-butadiene emissions can be attributed to on-road motor vehicles, with an additional 40 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and aircraft. Area-wide sources such as agricultural waste burning and open burning associated with forest management contribute approximately 15 percent. Stationary sources contribute less than one percent of the statewide 1,3-butadiene emissions. The primary stationary sources with reported 1,3-butadiene emissions include petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources are wildfires.

1,3-Butadiene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	25	1%
Area-wide Sources	404	15%
On-Road Mobile	1240	45%
Gasoline Vehicles	1216	44%
Diesel Vehicles	25	1%
Other Mobile	1109	40%
Gasoline Fuel	830	30%
Diesel Fuel	58	2%
Other Fuel	220	8%
Natural Sources	0	0%
Total Statewide	***2778***	***100%***

Table 5-6

2005 Top Ten Counties - 1,3-Butadiene Emissions

The top ten counties account for approximately 49 percent of the statewide 1,3-butadiene emissions. Emission sources in the South Coast Air Basin contribute approximately 26 percent of the statewide total: Los Angeles County (15 percent), Orange County (five percent), Riverside County (three percent), and South Coast portion of San Bernardino County (three percent). San Diego County accounts for approximately seven percent. Two counties in the San Joaquin Valley Air Basin contribute seven percent of the 1,3-butadiene: Tulare County (four percent) and Fresno County (three percent). The other counties in the top ten for 1,3-butadiene emissions are: Santa Clara, Alameda, and Sacramento.

1,3-Butadiene			
County	Air Basin	tons/year	Percent
Los Angeles	South Coast	410	15%
San Diego	San Diego	190	7%
Orange	South Coast	139	5%
Tulare	San Joaquin Valley	109	4%
Santa Clara	San Francisco Bay Area	93	3%
San Bernardino	South Coast	78	3%
Alameda	San Francisco Bay Area	77	3%
Fresno	San Joaquin Valley	76	3%
Riverside	South Coast	69	2%
Sacramento	Sacramento Valley	66	2%

Table 5-7

1,3-Butadiene

Statewide Air Quality and Health Risk

The ARB routinely monitors for 1,3-butadiene at its statewide air toxics monitoring network. Figure 5-4 shows the annual average statewide 1,3-butadiene concentrations and the associated health risk from this TAC alone since 1990. The data show a general downward trend, with some variability. To examine the trend in 1,3-butadiene while minimizing the influences of weather, the statewide average 1,3-butadiene concentration for 1990-1992 was compared to that for 2002-2004. The result is a 63 percent decrease in both concentration and health risk. Despite this substantial drop, the health risk from this compound remains relatively high. In 2004, there was an estimated risk of 40 excess cancer cases per million people. Of the ten compounds presented in this almanac, the average statewide health risk from 1,3-butadiene ranks third. Again, it is important to note that the data shown here reflect statewide averages. They do not consider local impacts, which may be higher or lower.

Similar to benzene, the ARB analyzed 1,3-butadiene samples using a single-point calibration of the gas chromatograph analyzers prior to 1999. While this method was approved by the U.S. EPA, it resulted in low concentrations being under-reported. Beginning January 1, 1999, new and more sophisticated computer software allowed the ARB to switch to a 3-point calibration of the analyzers. This improved measurement technique more accurately characterizes the ambient 1,3-butadiene, especially at low concentrations. However, concentrations measured using the 3-point calibration method are higher than those measured with the single-point calibration method. A year-long ARB study showed that the two measurement methods were highly correlated, and the ARB was able to develop a predictive relationship between them. To avoid discontinuity in the trend data, the pre-1999 1,3-butadiene data shown in Figure 5-4 have been adjusted according to these predictive equations and now reflect the results that would have been produced using the 3-point calibration method. Information about the specific study process and adjustment equations can be found on the "Laboratory Standard Operating Procedures for Ambient Air" page on the ARB website at *www.arb.ca.gov/aaqm/sop/summary/summary.htm*.

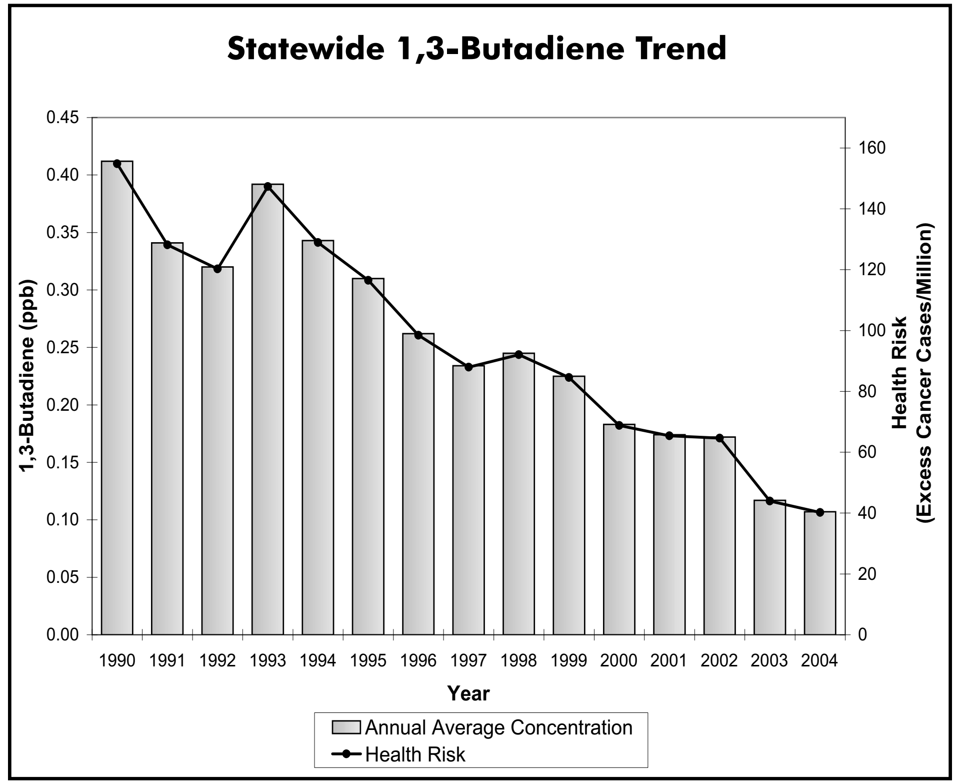

Figure 5-4

Similar to benzene, the ARB started to use a gas chromatography/mass spectrometry based method to analyze 1,3-butadiene in 2001. This change in method fulfilled a lower detection limit requirement for the SB 25 and Neighborhood Assessment Programs. The new method is also in line with the new U.S. EPA Urban Air Toxic Program being developed nationally. Measurements do not change substantially by using the GC/MS method, so no adjustment is needed to prior years' data.

In California, the majority of 1,3-butadiene emissions are from incomplete combustion of gasoline and diesel fuels. The ARB adopted Low Emission Vehicles (LEV)/Clean Fuels regulations in 1990 and Phase II reformulated gasoline regulations in 1991. The LEV regulations are expected to continue to reduce 1,3-butadiene emissions from cars and light-duty trucks as the fleet turns over and new low emission vehicles are introduced into the fleet.

Carbon Tetrachloride

2005 Statewide Emission Inventory

The ARB identified carbon tetrachloride as a Toxic Air Contaminant in 1987 under California's TAC program (AB 1807). In California, carbon tetrachloride has been identified as a carcinogen. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant.

The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.48 tons per year), and background concentrations account for most of the health risk.

Carbon Tetrachloride		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1.48	100%
Area-wide Sources	0	0%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***1.48***	***100%***

Table 5-8

2005 Top Ten Counties - Carbon Tetrachloride

The top three counties account for 79 percent of the statewide carbon tetrachloride emissions. Contra Costa County (San Francisco Bay Area Air Basin) accounts for approximately 63 percent, San Diego County accounts for eight percent, and Los Angeles County (South Coast Air Basin Portion) accounts for approximately 8 percent of the emissions of carbon tetrachloride statewide. Carbon tetrachloride emissions in the South Coast Air Basin portion of Los Angeles County have decreased from previous editions of the almanac due to the closure of a major facility in that area. Although the percentages for these counties are high, the emissions are very small (one ton or less per year in each county). The seven other counties in the top ten contribute approximately 19 percent of statewide carbon tetrachloride emissions.

Carbon Tetrachloride			
County	**Air Basin**	**tons/year**	**Percent**
Contra Costa	San Francisco Bay Area	0.93	63%
San Diego	San Diego	0.12	8%
Los Angeles	South Coast	0.11	8%
Riverside	South Coast	0.09	6%
Ventura	South Central Coast	0.05	4%
Sacramento	Sacramento Valley	0.05	3%
San Bernardino	Mojave Desert	0.04	2%
Orange	South Coast	0.02	1%
Kern	Mojave Desert	0.02	1%
San Bernardino	South Coast	0.01	1%

Table 5-9

Carbon Tetrachloride

Statewide Air Quality and Health Risk

The ARB routinely monitors carbon tetrachloride at its statewide air toxics monitoring network. Figure 5-5 shows the annual average statewide concentrations and the associated health risk from carbon tetrachloride alone. As with a number of other TACs, there are several years of incomplete data for carbon tetrachloride. The annual average concentration is available only if there is a full year of data. In 2004, a few months of data were invalidated by the ARB due to problems with laboratory equipment and associated data reliability. Therefore, to compare its health risk among the ten selected TACs, 2003 data were used instead. Based on the data that are available, the ambient concentrations and health risk dropped between 1990 and 1996, and then there was a substantial increase in values for 1998. During 2000 through 2003, values fluctuated slightly, which may be due in part to meteorological fluctuations rather than changes in emissions.

To examine the trend in carbon tetrachloride while minimizing the influences of weather on the trend, the statewide average carbon tetrachloride concentration for 1990-1992 was compared to that for 2001-2003. The result is a 29 percent decrease in both concentration and health risk. Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. Using 2003 health risk data, there was an estimated risk of 25 excess cancer cases per million people. The health risk of this TAC ranks fourth among the ten compounds presented in this almanac. As with all air pollutants, the health risk is not spread evenly throughout the State. In some areas, the health risk is higher than the statewide average, while in other areas the health risk is lower.

Unlike many of the other TACs, carbon tetrachloride is emitted primarily by sources other than motor vehicles, and there are virtually no emissions within California. However, because carbon tetrachloride persists in the atmosphere for many years (the estimated atmospheric lifetime is 50 years), background concentrations still pose a health risk.

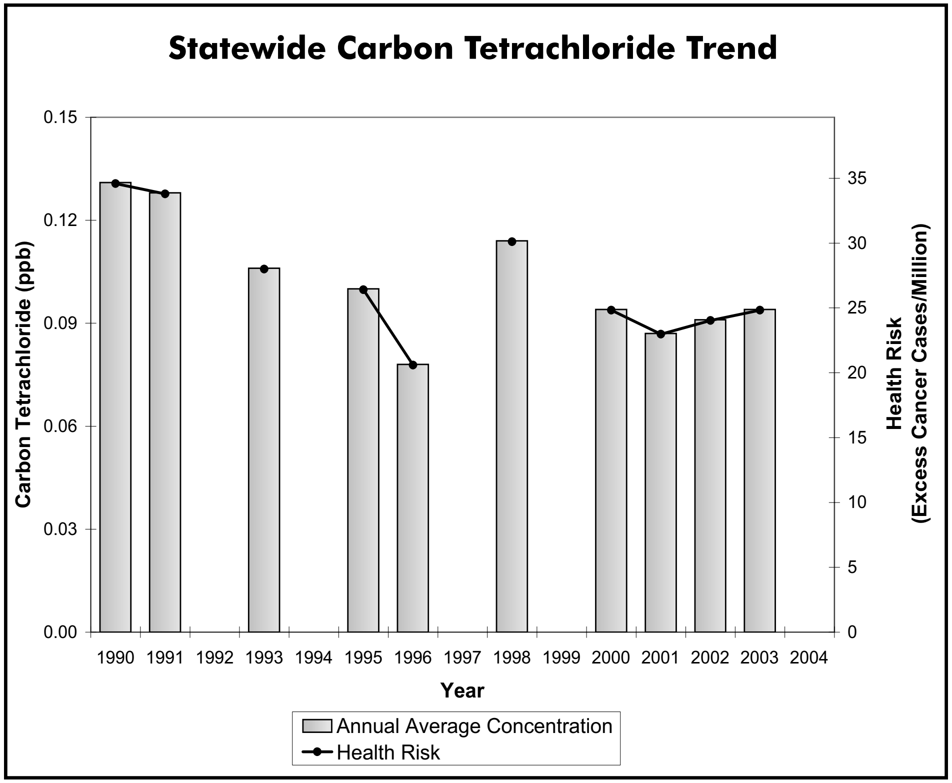

Figure 5-5

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Chromium, Hexavalent

2005 Statewide Emission Inventory

Hexavalent chromium was identified as a Toxic Air Contaminant in 1986 under California's TAC program (AB 1807). In California, hexavalent chromium has been identified as a carcinogen. There is epidemiological evidence that exposure to inhaled hexavalent chromium may result in lung cancer. The principal acute effects of hexavalent chromium are renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Chrome plating is a primary source of hexavalent chromium emissions in the State. Hexavalent chromium emissions from plating have declined significantly from previous editions of the almanac due to many platers switching to the use of trivalent chromium in place of hexavalent chromium. Chromic acid anodizing is another industrial metal finishing process which uses hexavalent chromium. A third source of hexavalent chromium emissions is the firebrick lining of glass furnaces. In California, stationary sources are estimated to emit about one half ton annually of hexavalent chromium. Emissions from these sources were obtained from facilities under the Air Toxics Hot Spots Act of 1987. This act required facilities to estimate toxics and potential toxics emissions, including hexavalent chromium. Approximately 0.13 tons of hexavalent chromium are emitted by gasoline motor vehicles. Other mobile sources such as trains and ships contribute approximately 0.83 tons of hexavalent chromium annually.

Chromium, Hexavalent		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	0.52	35%
Area-wide Sources	0.03	2%
On-Road Mobile	0.13	9%
Gasoline Vehicles	0.13	8%
Diesel Vehicles	< .01	0%
Other Mobile	0.83	55%
Gasoline Fuel	0.16	10%
Diesel Fuel	< .01	1%
Other Fuel	0.67	44%
Natural Sources	0	0%
Total Statewide	***1.50***	***100%***

Table 5-10

2005 Top Ten Counties - Chromium, Hexavalent

Four counties account for approximately 46 percent of the statewide hexavalent chromium emissions: Mojave Desert portion of Kern County (19 percent), San Diego County (16 percent), Mojave Desert portion of San Bernardino County (six percent) and Toulumne County (six percent). Collectively, approximately 25 percent of statewide hexavalent chromium emissions occur in the Mojave Desert Air Basin. Two counties in the San Joaquin Valley Air Basin contribute approximately six percent: Fresno County (three percent), and the San Joaquin Valley portion of Kern County (two percent).

Chromium, Hexavalent			
County	**Air Basin**	**tons/year**	**Percent**
Kern	Mojave Desert	0.29	19%
San Diego	San Diego	0.24	16%
San Bernardino	Mojave Desert	0.09	6%
Tuolumne	Mountain Counties	0.08	6%
Los Angeles	South Coast	0.08	5%
Imperial	Salton Sea	0.06	4%
Fresno	San Joaquin Valley	0.05	3%
Kern	San Joaquin Valley	0.04	3%
Sonoma	North Coast	0.04	3%
Orange	South Coast	0.04	3%

Table 5-11

Chromium, Hexavalent

Statewide Air Quality and Health Risk

Unlike the other TACs discussed in this almanac, hexavalent chromium is the cation of a metal salt rather than a gas. Statewide annual averages and health risk estimates are available for 1992 through 2004. Prior to 1992, a different measurement method was used. With this method, some of the hexavalent chromium was transformed into trivalent chromium on the collection filter. As a result, the hexavalent chromium concentrations were underestimated, and these data are not included in this almanac. Since 1992, a new and more accurate method has been used.

The statewide annual average concentrations and associated health risks are shown in Figure 5-6. Both show a general downward trend, with the exception of 1995. The high 1995 value is driven in part by an extremely high annual average for the Burbank site in the South Coast Air Basin. However, a number of other sites also had higher concentrations in 1995 than in other years. Hexavalent chromium values dropped substantially after 1995, and the decrease coincided with the complete implementation of the chrome plating and the chromate-treated cooling tower control measures. Between 1996 and 2004, values show general improvement, except for slight elevated values in 2000 and 2001.

To examine the trend in hexavalent chromium while minimizing the influences of weather on the trend, the average hexavalent chromium concentration for 1992-1994 was compared to that for 2002-2004. The result is a 57 percent decrease in both concentration and health risk. In 2004, there were an estimated 16 excess cancer cases per million people, based on the annual average concentration. Based on data for the ten TACs presented in this almanac, hexavalent chromium ranks sixth in terms of health risk. Health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level. It is important to remember that since hexavalent chromium exposure and health impact occur on a neighborhood scale, actual health risk can be higher in some areas than the statewide average, and lower in other areas.

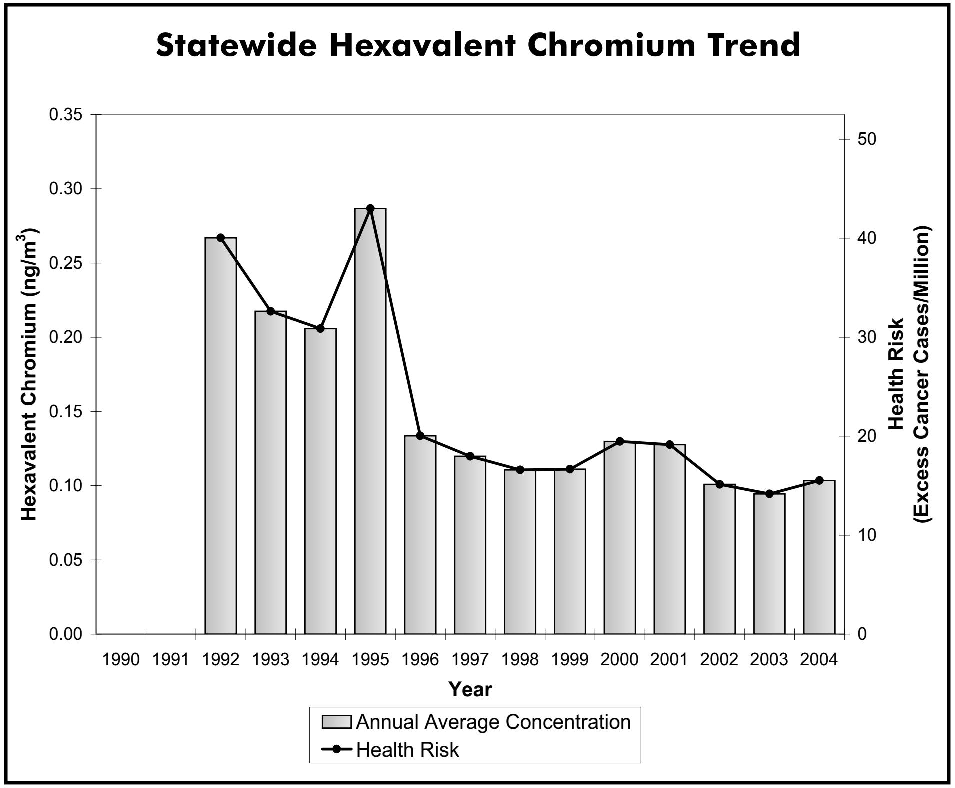

Figure 5-6

During 1998 through 2001, a very high percentage of the measured values were below the Limit of Detection (LOD), which is the lowest concentration that can be reliably measured. In calculating an annual average, values below the LOD are assumed equal to 0.1 nanograms per cubic meter (ng/m^3), which is one-half the LOD of 0.2 ng/m^3. The one-half of LOD approach applies to all other TACs when their measurements are below their respective LODs. It is a good estimate for some TACs, however, it is uncertain for hexavalent chromium due to the high number of very low concentrations. This approach continues to apply to hexavalent chromium for consistency. Starting on January 1, 2002, hexavalent chromium is being analyzed by compositing quarterly samples by site. Although the new method decreases the number of samples, it increases the sensitivity of the instrument by lowering the LOD from 0.2 ng/m^3 to 0.06 ng/m^3.

Implementation of a series of control measures has helped reduce ambient concentrations and associated health risks from hexavalent chromium. In 1988, the ARB adopted an airborne toxic control measure to reduce emissions of hexavalent chromium from chrome plating and chromic acid anodizing operations. The control measure reduced hexavalent chromium emissions from these operations by over 90 percent. In the past, compounds containing hexavalent chromium, such as sodium dichromate or lead chromate, were added to cooling tower water to control corrosion in the towers and associated heat exchangers. The ARB adopted a statewide airborne toxic control measure in 1989 that prohibits the use of hexavalent chromium in cooling towers. In September 2001, the ARB approved an air toxic control measure banning the use of both hexavalent chromium and cadmium in motor vehicle and mobile equipment coatings. The measure became effective January 1, 2003, and allows a sell-through period to deplete existing inventories. Statewide, ARB estimates that 99 percent of auto body repair and refinishing facilities already use chromium-free and cadmium-free coatings. However, this rule will ensure additional reductions in hexavalent chromium exposures near those remaining facilities that do not use chromium-free and cadmium-free coatings.

para-Dichlorobenzene

2005 Statewide Emission Inventory

The ARB identified *para*-dichlorobenzene as a TAC in April 1993 under AB 2728. This bill required the ARB to identify, by regulation, all federal hazardous air pollutants as TACs. In California, *para*-dichlorobenzene has been identified as a carcinogen. In addition to the carcinogenic impact, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans.

The primary area-wide sources that have reported emissions of *para*-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide *para*-dichlorobenzene emissions. Stationary sources contribute approximately 1 percent. The primary stationary sources include plating and polishing of fabricated metal products, crude petroleum and natural gas extraction, and sanitary services.

para-Dichlorobenzene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	8	0%
Area-wide Sources	2383	100%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***2391***	***100%***

Table 5-12

2005 Top Ten Counties - *para*-Dichlorobenzene

The top ten counties account for approximately 68 percent of the statewide *para*-dichlorobenzene emissions. The South Coast Air Basin has four of the top ten counties: South Coast portion of Los Angeles County (26 percent of the emissions of *para*-dichlorobenzene statewide), Orange County (eight percent), South Coast portion of San Bernardino County (four percent), and South Coast portion of Riverside County (four percent). Collectively, approximately 42 percent of statewide *para*-dichlorobenzene emissions occur in the South Coast Air Basin. San Diego County contributes approximately nine percent. Three counties in the San Francisco Bay Area Air Basin contribute approximately 12 percent: Santa Clara County (five percent), Alameda County (four percent), and Contra Costa County (three percent). The two other counties in the top ten for *para*-dichlorobenzene emissions are Sacramento and Fresno.

para-Dichlorobenzene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	623	26%
San Diego	San Diego	203	9%
Orange	South Coast	197	8%
Santa Clara	San Francisco Bay Area	116	5%
Alameda	San Francisco Bay Area	100	4%
San Bernardino	South Coast	94	4%
Riverside	South Coast	90	4%
Sacramento	Sacramento Valley	89	4%
Contra Costa	San Francisco Bay Area	67	3%
Fresno	San Joaquin Valley	58	2%

Table 5-13

para-Dichlorobenzene

Statewide Air Quality and Health Risk

The ARB routinely monitors *para*-dichlorobenzene in ambient air, and statewide annual average concentrations and health risk estimates are available for 1991 through 2004, with the exception of 1998 and 1999. No summary data are available for these years because of problems with laboratory equipment and associated data reliability. The trend graph for *para*-dichlorobenzene, shown in Figure 5-7, shows generally constant values throughout 1991 to 1997, with slightly lower values in 1994 and 1996. Following a drop in 2000, there was an upturn in 2001 through 2002. Since 2002, *para*-dichlorobenzene levels have been constant.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2004, there was an estimated risk of 10 excess cancer cases per million people from this compound alone. Based on this, *para*-dichlorobenzene ranks seventh out of the ten compounds presented in this almanac. It is important to remember that, as with all air pollutants, the data shown here reflect statewide averages. They do not reflect local impacts, which may be higher or lower.

To examine the trend in *para*-dichlorobenzene while minimzing the annual variation due to meteorology and sampling schedules, the statewide average concentration for 1991-1993 was compared to that for 2002-2004. The result is a 14 percent increase in both the concentration and health risk. The increase can be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations and those that are below the Limit of Detection (LOD).

Similar to hexavalent chromium, a very high percentage of the measured values were below the LOD, which is the lowest concentration that can be reliably measured. A change in the LOD occurred in 2001, and changed the value from 0.2 ppb to 0.3 ppb. In calculating an annual average, values below the LOD are assumed equal to 0.15 parts per billion (ppb), which is one-half the LOD of 0.3 ppb. The one-half of LOD approach applies to all other TACs when their measurements are below the LOD. It is a good estimate for some TACs, however, it is uncertain for *para*-dichlorobenzene due to the large number of samples with very low concentrations. However, for consistency, this approach to values below the LOD continues to apply to *para*-dichlorobenzene.

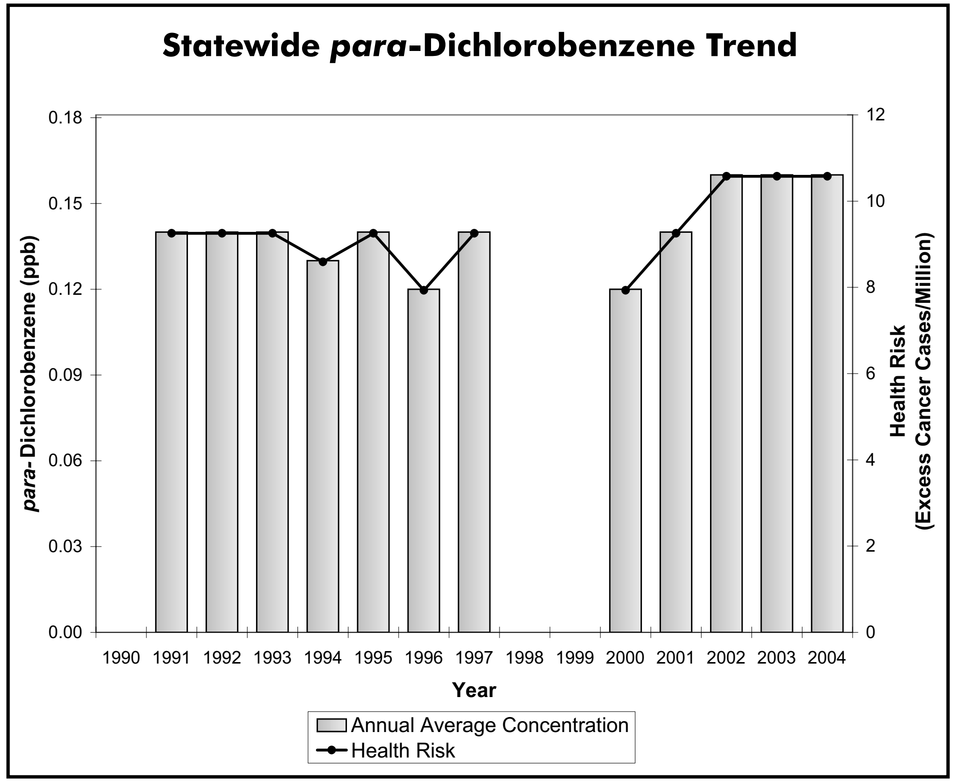

Figure 5-7

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Formaldehyde

2005 Statewide Emission Inventory

The ARB identified formaldehyde as a TAC in 1992 under California's TAC program (AB 1807). In California, formaldehyde has been identified as a carcinogen. Chronic exposure is associated with respiratory symptoms and eye, nose, and throat irritation.

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is used in resins, can be found in many consumer products as an antimicrobial agent, and is also used in fumigants and soil disinfectants. About 76 percent of direct formaldehyde emissions are estimated to come from the combustion of fossil fuels from mobile sources. Approximately 26 percent of the total statewide formaldehyde emissions can be attributed to on-road motor vehicles, with an additional 50 percent attributed to other mobile sources such as aircraft, recreational boats, and construction and mining equipment. Area-wide sources contribute approximately 11 percent and stationary sources contribute approximately 13 percent of the statewide formaldehyde emissions. The primary area-wide sources in California of formaldehyde emissions include wood burning in residential fireplaces and wood stoves.

Formaldehyde		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	2474	13%
Area-wide Sources	2014	11%
On-Road Mobile	4999	26%
Gasoline Vehicles	3076	16%
Diesel Vehicles	1922	10%
Other Mobile	9590	50%
Gasoline Fuel	2979	16%
Diesel Fuel	4526	24%
Other Fuel	2085	11%
Natural Sources	0	0%
Total Statewide	***19078***	***100%***

Table 5-14

2005 Top Ten Counties - Formaldehyde

The top ten counties account for approximately 50 percent of the statewide formaldehyde emissions. The South Coast Air Basin has four of the top ten counties emitting formaldehyde: South Coast portion of Los Angeles County (14 percent of the emissions of formaldehyde statewide), Orange County (five percent), South Coast portion of San Bernardino County (three percent), and South Coast portion of Riverside County (three percent). Collectively, approximately 25 percent of statewide formaldehyde emissions occur in the South Coast Air Basin. The six other counties in the top ten for formaldehyde emissions are: San Diego, Kern, Alameda, Santa Clara, Santa Barbara, and Fresno. These six counties account for approximately 25 percent of statewide formaldehyde emissions.

Formaldehyde			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	2664	14%
San Diego	San Diego	1240	6%
Kern	San Joaquin Valley	1184	6%
Orange	South Coast	908	5%
Alameda	San Francisco Bay Area	711	4%
Santa Clara	San Francisco Bay Area	647	3%
Santa Barbara	South Central Coast	585	3%
Fresno	San Joaquin Valley	558	3%
Riverside	South Coast	529	3%
San Bernardino	South Coast	522	3%

Table 5-15

Formaldehyde

Statewide Air Quality and Health Risk

The ARB routinely monitors formaldehyde concentrations in the ambient air throughout its monitoring network, and statewide annual average concentrations and associated health risk are available for 1990 through 2004. However, values prior to 1996 are uncertain because the data were based on a method that underestimated the actual concentrations. A method change in 1996 corrected this problem, but a correction factor could not be developed for the earlier data. While the data prior to the method change are included here for completeness, they are not directly comparable to data collected during the later years. The trend graph for formaldehyde, shown in Figure 5-8, shows a great deal of variability with a general upward trend.

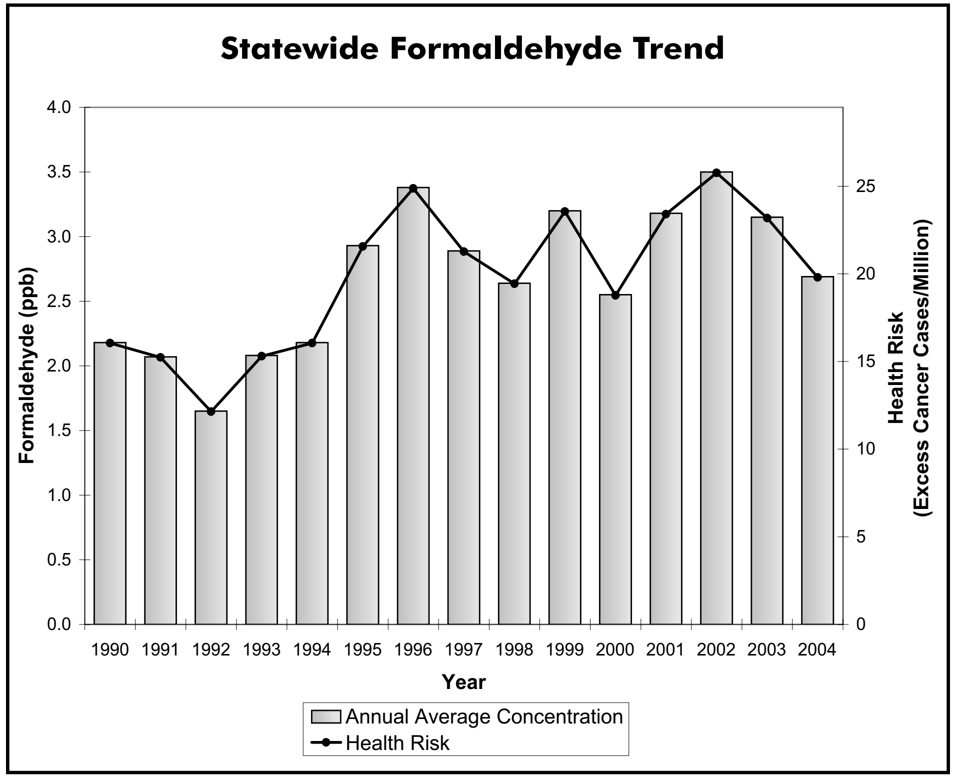

Figure 5-8

To examine the trend in formaldehyde using available data while minimizing the influences of weather on the trend, the statewide average formaldehyde concentration for 1996-1998 was compared to that for 2002-2004 (since formaldehyde data prior to 1996 are not reliable). The result is a slight (five percent) increase in both concentration and health risk. Note that health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2004, there was an estimated risk of 20 excess cancer cases per million people from formaldehyde alone. Based on data for all ten TACs presented in this almanac, formaldehyde ranks fifth in terms of health risk. As with other TACs, the health risk is not spread evenly throughout the State, so in some areas the health risk is higher than the statewide average while in other areas, the health risk is lower.

Although formaldehyde is emitted by both stationary and mobile sources, mobile sources are, by far, the largest contributors. The ARB adopted the Low Emissions/Clean Fuels Regulations in 1990, and these regulations are expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. Formaldehyde, similar to acetaldehyde, can also be formed in the environment as a result of the photochemical oxidation of reactive organic gases. This secondary contribution can be hard to quantify and can also contribute to fluctuations observed in the ambient levels of formaldehyde.

Formaldehyde also poses a problem for indoor air quality, and its concentrations indoors are generally higher. This is because many building materials, consumer products, and fabrics emit formaldehyde. As a result, indoor formaldehyde levels are expected to remain higher than outdoor levels because of new materials brought into homes, as a consequence of remodeling or purchasing new furnishings. Other indoor combustion sources such as wood and gas stoves, kerosene heaters, and cigarettes also contribute to indoor formaldehyde levels, although intermittently.

Methylene Chloride

2005 Statewide Emission Inventory

The ARB identified methylene chloride as a Toxic Air Contaminant in 1987 under California's TAC program. In California, methylene chloride has been identified as a carcinogen. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity.

Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Although methylene chloride is used in some aerosol consumer products (e.g., aerosol paints and automotive products), most consumer product manufacturers have voluntarily phased out its use. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride. These sources contribute approximately 45 percent of the statewide methylene chloride emissions. Area-wide sources contribute approximately 55 percent. The primary area-wide sources include consumer products such as paint removers and strippers and automotive brake cleaners.

Methylene Chloride		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	2977	45%
Area-wide Sources	3580	55%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***6557***	***100%***

Table 5-16

2005 Top Ten Counties - Methylene Chloride

The top ten counties account for approximately 76 percent of the statewide methylene chloride emissions. The South Coast Air Basin has four of the top ten counties emitting methylene chloride: South Coast portion of Los Angeles County (33 percent of the emissions of methylene chloride statewide), Orange County (14 percent), South Coast portion of San Bernardino County (four percent), and South Coast portion of Riverside County (three percent). Collectively, approximately 56 percent of statewide methylene chloride emissions occur in the South Coast Air Basin. Two counties in the San Francisco Bay Area Air Basin contribute approximately seven percent: Santa Clara County (four percent), and Alameda County (three percent). The four other counties in the top ten for methylene chloride emissions are: San Diego, Sacramento, Ventura and Fresno. Together, these three counties account for approximately 13 percent of statewide methylene chloride emissions.

Methylene Chloride			
County	Air Basin	tons/year	Percent
Los Angeles	South Coast	2137	33%
Orange	South Coast	933	14%
San Diego	San Diego	370	6%
Santa Clara	San Francisco Bay Area	263	4%
San Bernardino	South Coast	239	4%
Alameda	San Francisco Bay Area	212	3%
Riverside	South Coast	196	3%
Sacramento	Sacramento Valley	179	3%
Ventura	South Central Coast	161	2%
Fresno	San Joaquin Valley	129	2%

Table 5-17

Methylene Chloride

Statewide Air Quality and Health Risk

The ARB routinely monitors methylene chloride in the ambient air. The trend graph in Figure 5-9 shows an overall downward trend with some variability, particularly during the early years. The drop in 2001 was substantial, and the downward trend has continued between 2002 and 2004 with minor drops. To examine the trend in methylene chloride while minimizing the influences of weather on the trend, the statewide average methylene chloride concentration for 1990-1992 was compared to that for 2002-2004. The result is a 74 percent decrease in both concentration and health risk.

Health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years. During 2004, there was an estimated risk from methylene chloride of less than one excess cancer case per million people. Of the ten compounds presented in this almanac, methylene chloride presents the lowest health risk, on a statewide basis. However, any level of risk is a concern from a public health standpoint.

In California, paint removers account for the largest use of methylene chloride, which is the primary ingredient in paint stripping formulations used for industrial, commercial, military, and domestic applications. Because methylene chloride is also a constituent in many consumer products, including aerosol paints and automotive products, short-term indoor concentrations may be several orders of magnitude higher than the ambient concentrations. Many manufacturers of consumer products are voluntarily phasing-out their use of methylene chloride. In addition, in the case of aerosol paints, use will be restricted by a provision in the ARB's "Regulation for Reducing Volatile Organic Compound (VOC) Emissions from Aerosol Coating Products," adopted in March 1995. These regulations should help to further reduce ambient concentrations and health risks.

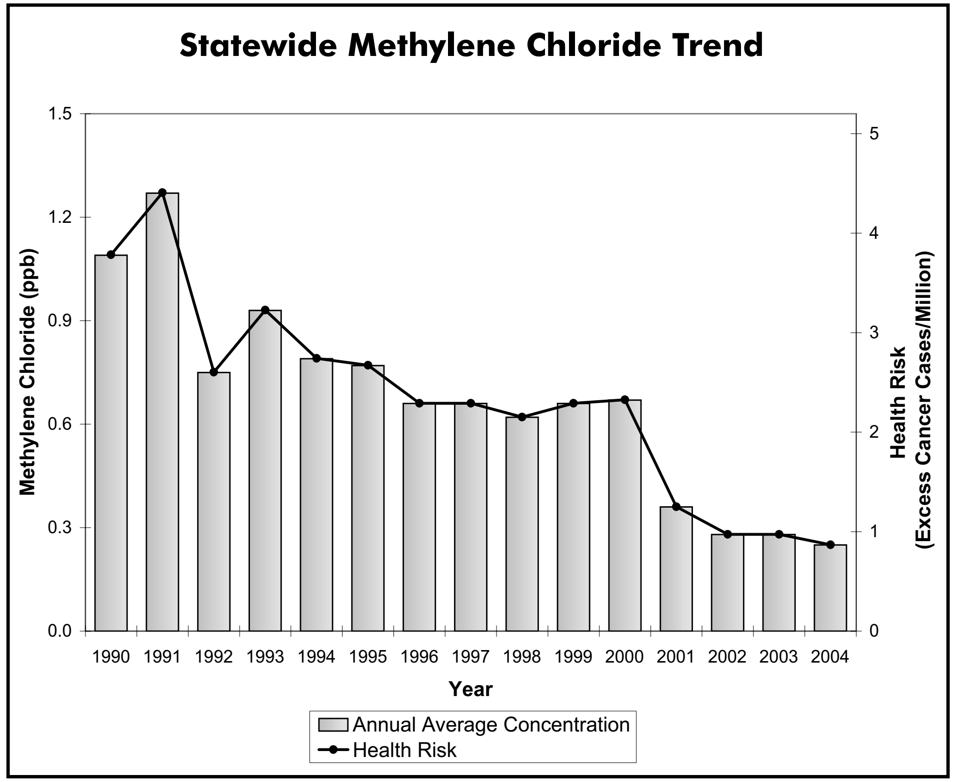

Figure 5-9

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Perchloroethylene

2005 Statewide Emission Inventory

The ARB identified perchloroethylene as a Toxic Air Contaminant in 1991 under California's TAC program (AB 1807). In California, perchloroethylene has been identified as a carcinogen. Perchloroethylene vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity, as well as kidney dysfunction and neurological effects.

Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. These stationary sources account for 61 percent of the statewide emissions of perchloroethylene. Area-wide sources contribute approximately 39 percent. The primary area-wide sources include consumer products such as automotive brake cleaners and tire sealants and inflators.

Perchloroethylene		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	3264	61%
Area-wide Sources	2096	39%
On-Road Mobile	0	0%
Gasoline Vehicles	0	0%
Diesel Vehicles	0	0%
Other Mobile	0	0%
Gasoline Fuel	0	0%
Diesel Fuel	0	0%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***5361***	***100%***

Table 5-18

2005 Top Ten Counties - Perchloroethylene

The top ten counties account for approximately 67 percent of the statewide perchloroethylene emissions. The South Coast Air Basin has four of the top ten counties emitting perchloroethylene: South Coast portion of Los Angeles County (23 percent of the emissions of perchloroethylene statewide), Orange County (eight percent), South Coast portion of San Bernardino County (four percent), and South Coast portion of Riverside County (three percent). Collectively, approximately 38 percent of statewide perchloroethylene emissions occur in the South Coast Air Basin. San Diego County contributes approximately 12 percent. The five other counties in the top ten for perchloroethylene emissions are: Sacramento, Santa Clara, Alameda, Fresno, and San Joaquin. These five counties account for approximately 16 percent of statewide perchloroethylene emissions.

Perchloroethylene			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	1224	23%
San Diego	San Diego	657	12%
Orange	South Coast	420	8%
Sacramento	Sacramento Valley	261	5%
San Bernardino	South Coast	185	3%
Fresno	San Joaquin Valley	183	3%
Riverside	South Coast	182	3%
Santa Clara	San Francisco Bay Area	178	3%
Alameda	San Francisco Bay Area	167	3%
San Joaquin	San Joaquin Valley	119	2%

Table 5-19

Perchloroethylene

Statewide Air Quality and Health Risk

The ARB routinely monitors perchloroethylene concentrations in the ambient air. Although the trend graph for perchloroethylene in Figure 5-10 shows some variability, during the earlier years, there is an overall downward trend. To examine the trend in perchloroethylene over the monitoring period of record and to minimize the influences of weather on the trend, the statewide perchloroethylene concentration for 1990-1992 was compared to that for 2002-2004. The result is a 76 percent decrease in both concentration and health risk. For 1999, complete and representative data are not available. During 2004, there was an estimated risk of two excess cancer cases per million people. Based on this, perchloroethylene ranks ninth out of the ten compounds presented in this almanac. Health risk is based on the annual average concentration and represents the estimated risk of excess cancer cases per million people exposed over a 70-year lifetime at the specified concentration level.

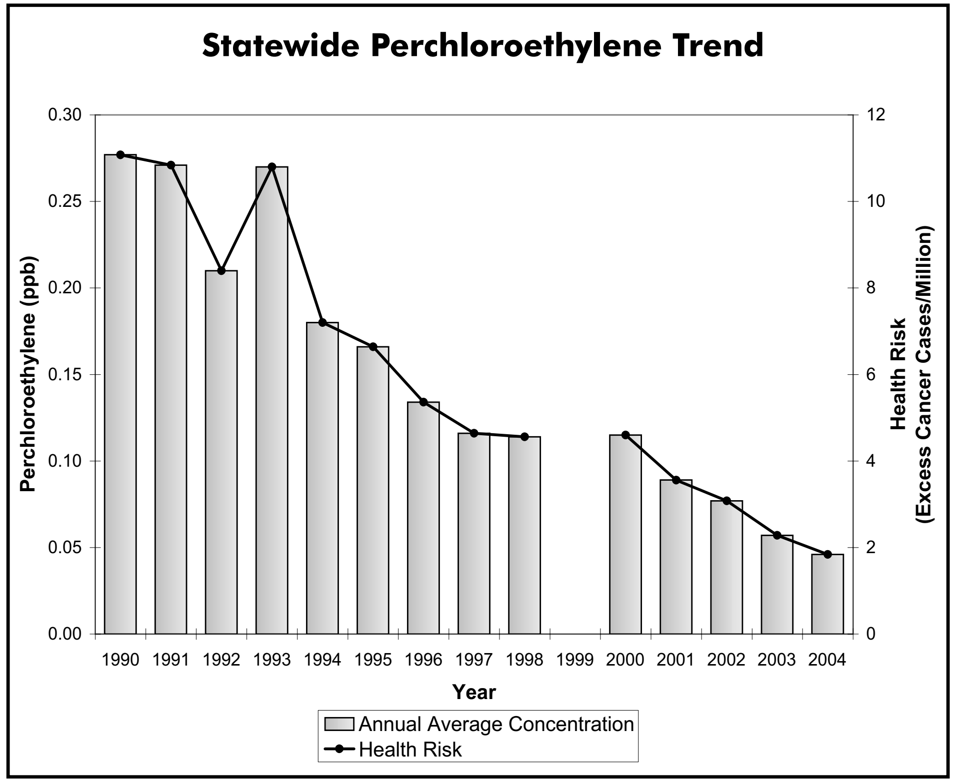

Figure 5-10

When the ARB identified perchloroethylene as a TAC in October 1991, it was estimated that 60 percent of perchloroethylene came from dry cleaning operations. Examination of industry practices suggested the potential for significant reductions of emissions. The ARB focused control efforts on that industry and adopted a control measure governing the use of perchloroethylene in dry cleaning operations in October 1993. The final deadline for compliance was 1998. In addition to requiring emission controls, the ARB has worked with industry to provide training for industry personnel on improved practices and methods for reducing emissions. In the near future, the most significant factor affecting emissions will most likely be a continued reduction as more dry cleaning operations modify or replace older equipment. In the long-term, population growth in California may lead to increased demand for services and products using perchloroethylene, which may increase emissions from dry cleaners. However, the ARB has developed control measures that prohibit the use of perchloroethene in automotive products, aerosol adhesives, and aerosol coatings.

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Diesel Particulate Matter

2005 Statewide Emission Inventory

The ARB identified the particulate matter (PM) emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. In California, diesel engine exhaust has been identified as a carcinogen. Most researchers believe that diesel exhaust particles contribute the majority of the risk.

Diesel PM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 19 percent of the statewide total, with an additional 77 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about five percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report diesel PM emissions also include heavy construction (except highway), manufacturers of asphalt paving materials and blocks, and electrical generation.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB's October 2000 report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (Diesel Risk Reduction Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC2001 (EMFAC1.99(f) 6/26/00), whereas the current estimates are based on EMFAC2002 (V2.02). The other mobile inventory includes revised estimates for ship diesel PM emissions. In 2005 ARB staff improved the methodology for estimating ship emissions by developing a consistent statewide methodology that incorporates more recent data on ship activities and emission factors. This has resulted in about a 119 percent increase in the estimates for ship emissions as compared to estimates developed with previous methodologies."

Diesel PM		
Emissions Source	**tons/year**	**Percent State**
Stationary Sources	1427	5%
Area-wide Sources	0	0%
On-Road Mobile	5790	19%
Gasoline Vehicles	0	0%
Diesel Vehicles	5790	19%
Other Mobile	23785	77%
Gasoline Fuel	0	0%
Diesel Fuel and Residual Oil	23785	77%
Other Fuel	0	0%
Natural Sources	0	0%
Total Statewide	***31002***	***100%***

Table 5-20

2005 Top Ten Counties - Diesel Particulate Matter

The top ten counties account for approximately 56 percent of the statewide diesel particulate matter emissions. The South Coast Air Basin has four of the top ten counties emitting diesel particulate matter: South Coast portion of Los Angeles County (18 percent of the emissions of diesel particulate matter statewide), Orange County (seven percent), South Coast portion of Riverside County (four percent), and the South Coast portion of San Bernardino County (three percent). Collectively, approximately 32 percent of statewide diesel particulate matter emissions occur in the South Coast Air Basin. San Diego County contributes approximately six percent, and Fresno County contributes approximately four percent. Three counties in the San Francisco Bay Area Air Basin contribute 11 percent: Alameda (four percent), Santa Clara (four percent), and San Francisco (three percent).

Diesel PM			
County	**Air Basin**	**tons/year**	**Percent**
Los Angeles	South Coast	4654	15%
San Diego	San Diego	1798	6%
Orange	South Coast	1376	4%
Alameda	San Francisco Bay Area	1369	4%
Fresno	San Joaquin Valley	977	3%
Riverside	South Coast	966	3%
Santa Clara	San Francisco Bay Area	875	3%
San Bernardino	South Coast	750	2%
Sacramento	Sacramento Valley	745	2%
Kern	San Joaquin Valley	726	2%

Table 5-21

Diesel Particulate Matter

Statewide Air Quality and Health Risk

The exhaust from diesel-fueled engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. More than 40 diesel exhaust components are listed by the State and federal governments as toxic air contaminants or hazardous air pollutants. Most researchers believe that diesel PM contributes the majority of the risk from exposure to diesel exhaust because the particles carry many of the harmful organics and metals present in the exhaust.

Unlike the other toxic air contaminants presented in this almanac, the ARB does not monitor diesel PM because there is no routine method for monitoring ambient concentrations. However, the ARB made a preliminary estimation of diesel PM concentrations for the State's 15 air basins and for the State as a whole using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. The ARB subsequently updated the original statewide estimates based on the ratio between the previous estimate for 1990 and the most recent diesel PM emission inventory for the year 1990. The details of the methodology are described in Appendix VI to the ARB report entitled: *"Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,"* (Risk Reduction Plan or Plan) dated October 2000.

The updated statewide population-weighted average diesel PM concentrations and health risk for various years are shown in Figure 5-11. The average statewide concentration for 1990 was estimated at 3.0 micrograms per cubic meter ($\mu g/m^3$). This is associated with a health risk of 900 excess cancer cases per million people exposed over a 70-year lifetime. The estimates for 2000 show a 40 percent drop from 1990, with a concentration of 1.8 $\mu g/m^3$ and an associated health risk of 540 excess cancer cases per million people. In addition, the ARB estimated population-weighted concentrations for 2010 and 2020. Two estimates are given for each of these years: one reflecting the estimated ambient concentrations without implementing the Risk Reduction Plan and one reflecting the estimated ambient concentrations with implementation of control measures in the Risk Reduction Plan. These future year estimates are based on linear extrapolations from the 1990 emissions inventory and linear rollback techniques. It is important to note that the estimated risk from diesel PM is higher than the risk from all other toxic air contaminants combined, and this TAC poses the most significant risk to California's citizens. In fact,

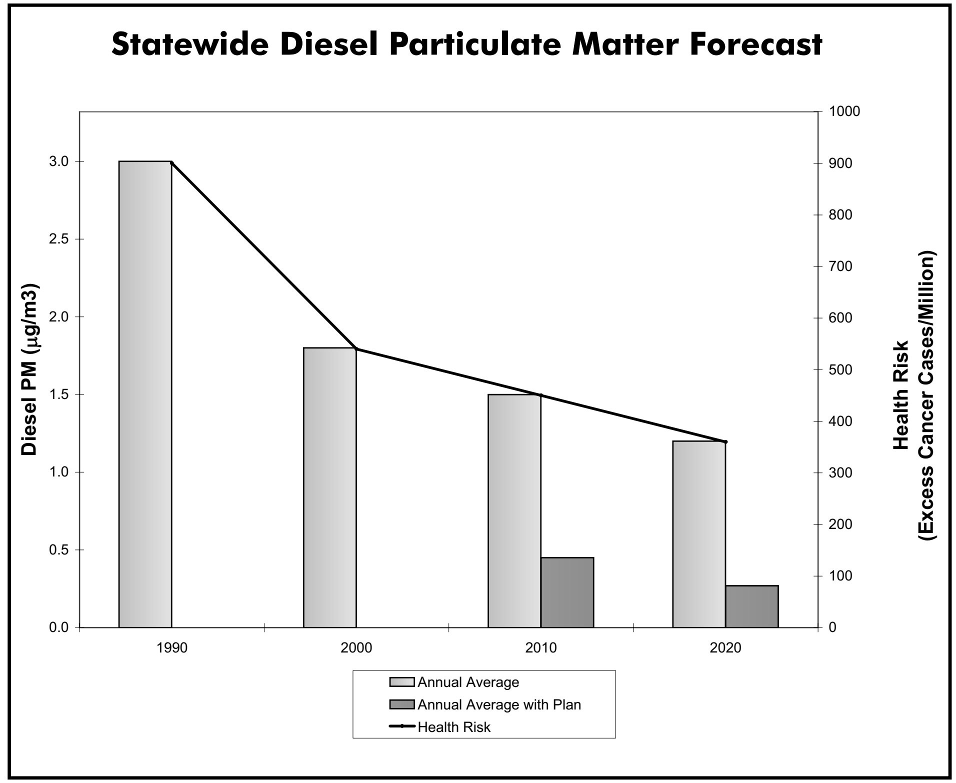


Figure 5-11

the ARB estimates that 70 percent of the known statewide cancer risk from outdoor air toxics is attributable to diesel PM.

The Risk Reduction Plan provides a mechanism for combating the diesel PM problem. Without implementing the Plan, concentrations in 2010 and 2020 are estimated to drop by only about 17 percent and 33 percent, respectively, from the estimated year 2000 level. However, the goal of the Plan is to reduce concentrations by 75 percent by 2010 and 85 percent by 2020. The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the Risk Reduction Plan will significantly reduce emissions from both old and new diesel-fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, diesel PM concentrations and associated health risks should continue to decline.

South Coast Air Basin

2005 Emission Inventory by Compound

Acetaldehyde

Approximately 92 percent of the emissions of acetaldehyde are from mobile sources.

South Coast - Acetaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	51	3%	1%
Area-wide Sources	90	5%	1%
On-Road Mobile	647	37%	8%
Gasoline Vehicles	314	18%	4%
Diesel Vehicles	332	19%	4%
Other Mobile	955	55%	12%
Gasoline Fuel	281	16%	4%
Diesel Fuel	629	36%	8%
Other Fuel	45	3%	1%
Natural Sources	0	0%	0%
Total	1743	100%	23%
Total Statewide	**7675**		

Table 5-22

Benzene

The primary sources of benzene emissions in the South Coast Air Basin are mobile sources (approximately 92 percent).

South Coast - Benzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	248	7%	2%
Area-wide Sources	46	1%	0%
On-Road Mobile	2116	59%	17%
Gasoline Vehicles	2026	56%	16%
Diesel Vehicles	90	3%	1%
Other Mobile	1196	33%	10%
Gasoline Fuel	1007	28%	8%
Diesel Fuel	171	5%	1%
Other Fuel	18	0%	0%
Natural Sources	0	0%	0%
Total	3606	100%	29%
Total Statewide	**12293**		

Table 5-23

1,3-Butadiene

Approximately 99 percent of the emissions of 1,3-butadiene are from mobile sources.

Carbon Tetrachloride

Stationary sources, such as chemical manufacturers and petroleum refineries, account for all of the emissions of carbon tetrachloride.

South Coast - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	8	1%	0%
Area-wide Sources	2	0%	0%
On-Road Mobile	429	62%	15%
Gasoline Vehicles	420	60%	15%
Diesel Vehicles	9	1%	0%
Other Mobile	256	37%	9%
Gasoline Fuel	238	34%	9%
Diesel Fuel	16	2%	1%
Other Fuel	1	0%	0%
Natural Sources	0	0%	0%
Total	695	100%	25%
Total Statewide	**2778**		

Table 5-24

South Coast - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.24	100%	16%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.24	100%	16%
Total Statewide	**1.48**		

Table 5-25

Chromium, Hexavalent

Approximately 35 percent of the hexavalent chromium emissions are from stationary sources such as chrome platers, aircraft and parts manufacturing, and fabricated metal product manufacturing.

South Coast - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.06	35%	4%
Area-wide Sources	< .01	1%	0%
On-Road Mobile	0.05	31%	3%
Gasoline Vehicles	0.05	31%	3%
Diesel Vehicles	< .01	1%	0%
Other Mobile	0.05	33%	4%
Gasoline Fuel	0.05	31%	3%
Diesel Fuel	< .01	1%	0%
Other Fuel	< .01	1%	0%
Natural Sources	0	0%	0%
Total	0.16	100%	11%
Total Statewide	**1.52**		

Table 5-26

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

South Coast - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	1004	100%	42%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	1004	100%	42%
Total Statewide	**2391**		

Table 5-27

Formaldehyde

Approximately 85 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 57 percent of the emissions of methylene chloride are from stationary sources such as plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers.

South Coast - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	482	10%	3%
Area-wide Sources	188	4%	1%
On-Road Mobile	1734	37%	9%
Gasoline Vehicles	1069	23%	6%
Diesel Vehicles	665	14%	3%
Other Mobile	2220	48%	12%
Gasoline Fuel	861	19%	5%
Diesel Fuel	1259	27%	7%
Other Fuel	100	2%	1%
Natural Sources	0	0%	0%
Total	4623	100%	24%
Total Statewide	**19078**		

Table 5-28

South Coast - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	2003	57%	31%
Area-wide Sources	1502	43%	23%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	3505	100%	53%
Total Statewide	**6557**		

Table 5-29

Perchloroethylene

Approximately 56 percent of the emissions of perchloroethylene are from dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

Diesel Particulate Matter

Approximately 97 percent of emissions of diesel particulate matter are from mobile sources.

South Coast - Perchloroethylene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	1134	56%	21%
Area-wide Sources	878	44%	16%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	2012	100%	38%
Total Statewide	5361		

Table 5-30

South Coast - Diesel PM			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	212	3%	1%
Area-wide Sources	0	0%	0%
On-Road Mobile	2101	27%	7%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	2101	27%	7%
Other Mobile	5433	70%	18%
Gasoline Fuel	0	0%	0%
Diesel Fuel	5433	70%	18%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	7746	100%	25%
Total Statewide	31002		

Table 5-31

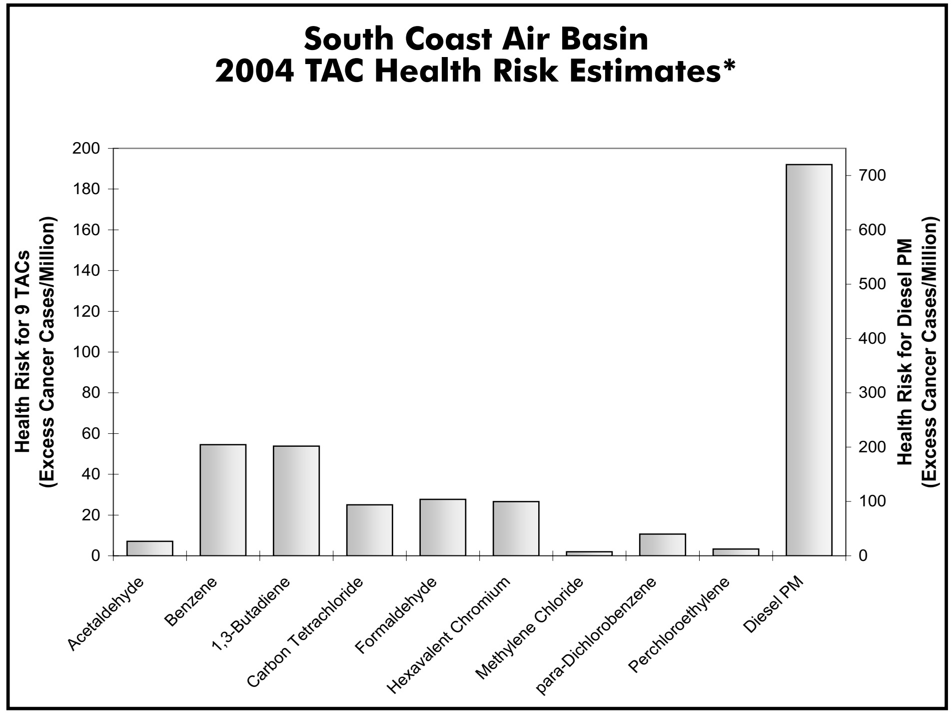
South Coast Air Basin

Air Quality and Health Risk

From 1990 through 2004, the ARB monitored ambient toxics concentrations at seven sites in the South Coast Air Basin. Data are available for most of the years at sites located in Burbank, Los Angeles, North Long Beach, and Riverside. Measurements for 1990 through 1997 are also available from a site at Upland. In addition, there are data for 1998 at a site in Fontana. During December 1999, monitoring activities for most of the TACs at Fontana were relocated to Azusa. Annual average concentration and associated health risk are not available for the year during which the site was moved because neither site had a full year of data.

Annual average concentrations and associated health risks for the top ten TACs individually as well as their cumulative health risk for the South Coast Air Basin, are provided in Table 5-32. Data for individual sites are provided in Appendix C. Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to analyze these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years, however, these data are included here for completeness.

Figure 5-12 shows 2004 health risks posed by the top ten TACs individually for the South Coast Air Basin. As indicated on the graph, the health risk data reflect the year of 2004, except for diesel PM and carbon tetrachloride. The health risk for diesel PM reflects the year 2000, the most recent year for which estimated data are available. Carbon tetrachloride data are not available for 2004 due to problems with laboratory equipment and associated data reliability, so 2003 data are used instead. It is important to note that health risks shown here are based on an annual average concentration for all sites in the air basin. The health risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.



** Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2004.*

Figure 5-12

Diesel PM poses the greatest health risk among the ten TACs. The estimates for diesel PM was based on receptor modeling techniques. In the South Coast Air Basin, the estimated health risk from diesel PM was 720 excess cancer cases per million people in 2000. Although the health risk is higher than the statewide average, it represents a 33 percent drop between 1990 and 2000.

Trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for 1990-1992 time period was compared to that for 2002-2004. The health risks of 1,3-butadiene and benzene have been reduced by 66 percent and 76 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 60 percent and 78 percent, respectively. Overall, in the South Coast Air Basin, all TACs have shown improvement since 1990, but their health risks are still higher than the statewide levels. It is important to note that there may be other compounds that pose a significant health risk but are not monitored. Reductions in ambient TAC concentrations and health risks should continue, as new rules and regulations are implemented to control toxic air contaminants.

In addition to the routine monitoring, a special study was conducted at two sites located in the Boyle Heights and Wilmington areas of Los Angeles between February 2001 and May 2002 (Boyle Heights) and between May 2001 and July 2002 (Wilmington). Monitoring included both TACs and criteria air pollutants. Limited monitoring of a few pollutants was conducted at two satellite sites in Boyle Heights from March 2001 through October 2001, and at one satellite site in Wilmington from November 2001 through May 2002. The Boyle Heights and Wilmington communities are both located near major freeways. The Wilmington community is also located near oil refineries and port facilities. Although not included in this almanac, data from Boyle Heights, Wilmington, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

South Coast Air Basin

Annual Average Concentrations and Health Risks

South Coast Air Basin Toxic Air Contaminants-Annual Average Concentrations and Health Risks																
TAC*	**Conc./Risk**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	2.46	3	2.46	2.67	2.3	0.97	2.08	1.77	1.54	1.63	1.26	1.47	1.41	1.47	1.46
	Health Risk	12	15	12	13	11	5	10	9	7	8	6	7	7	7	7
Benzene	Annual Avg	3.42	2.91	2.61	2.17	2.4	1.89	1.45	1.34	1.25	1.2	0.97	0.86	0.769	0.745	0.589
	Health Risk	317	269	242	201	222	175	134	124	116	111	90	80	71	69	55
1,3-Butadiene	Annual Avg	0.53	0.45	0.50	0.57	0.50	0.46	0.39	0.38	0.35	0.33	0.25	0.25	0.21	0.15	0.14
	Health Risk	200	170	187	212	187	173	146	142	133	123	94	94	79	55	54
Carbon Tetrachloride	Annual Avg	0.14	0.13		0.11		0.10	0.08		0.11		0.10	0.09	0.09	0.09	
	Health Risk	36	35		28		27	21		30		25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.39	0.29	0.29	0.46	0.18	0.17	0.15	0.14	0.18		0.179	0.158	0.177
	Health Risk			59	43	43	69	27	25	22	22	27		27	24	27
para-Dichlorobenzene	Annual Avg		0.17	0.19	0.17	0.13	0.17	0.11	0.13			0.13	0.15	0.16	0.17	0.16
	Health Risk		11	13	11	8	11	7	9			9	10	11	11	11
Formaldehyde	Annual Avg	2.92	3.08	2.22	3.22	3.14	3.57	5.06	4.47	3.79	4.06	3.13	4.13	4.16	3.83	3.76
	Health Risk	22	23	16	24	23	26	37	33	28	30	23	30	31	28	28
Methylene Chloride	Annual Avg	1.86	1.51	0.9	1.23	1.1	1.28	0.95	1.14	0.85	0.92	0.83	0.63	0.57	0.59	0.57
	Health Risk	6	5	3	4	4	4	3	4	3	3	3	2	2	2	2
Perchloroethylene	Annual Avg	0.58	0.55	0.41	0.45	0.39	0.36	0.32	0.27	0.26		0.21	0.18	0.15	0.11	0.08
	Health Risk	23	22	16	18	16	15	13	11	10		8	7	6	4	3
Diesel PM**	*Annual Avg*	*(3.6)*					*(2.7)*					*(2.4)*				
	Health Risk	*(1080)*					*(810)*					*(720)*				
Average Basin Risk***	Without Diesel PM	616	550	548	554	514	505	398	357	349	297	285	253	258	225	187
	With Diesel PM	*(1696)*					*(1315)*					*(1005)*				

* Concentrations for Hexavalent Chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

** Diesel PM concentration estimates are based on receptor modeling techniques, and estimates are available only for selected years.

*** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

Table 5-32

San Francisco Bay Area Air Basin
2005 Emission Inventory by Compound

Acetaldehyde

Approximately 77 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion and agricultural burning contribute approximately 22 percent.

San Francisco Bay Area - Acetaldehyde			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	19	1%	0%
Area-wide Sources	293	22%	4%
On-Road Mobile	355	26%	5%
Gasoline Vehicles	177	13%	2%
Diesel Vehicles	178	13%	2%
Other Mobile	687	51%	9%
Gasoline Fuel	120	9%	2%
Diesel Fuel	414	31%	5%
Other Fuel	153	11%	2%
Natural Sources	0	0%	0%
Total	1355	100%	18%
Total Statewide	7675		

Table 5-33

Benzene

Mobile sources are the primary sources of benzene emissions in the San Francisco Bay Area Air Basin (approximately 91 percent).

San Francisco Bay Area - Benzene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	146	7%	1%
Area-wide Sources	38	2%	0%
On-Road Mobile	1202	60%	10%
Gasoline Vehicles	1153	58%	9%
Diesel Vehicles	48	2%	0%
Other Mobile	611	31%	5%
Gasoline Fuel	437	22%	4%
Diesel Fuel	113	6%	1%
Other Fuel	62	3%	1%
Natural Sources	0	0%	0%
Total	1997	100%	16%
Total Statewide	12293		

Table 5-34

1,3-Butadiene

Essentially all of the emissions of 1,3-butadiene are from mobile sources.

San Francisco Bay Area - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	1	0%	0%
Area-wide Sources	2	1%	0%
On-Road Mobile	250	60%	9%
Gasoline Vehicles	245	59%	9%
Diesel Vehicles	5	1%	0%
Other Mobile	161	39%	6%
Gasoline Fuel	103	25%	4%
Diesel Fuel	11	3%	0%
Other Fuel	47	11%	2%
Natural Sources	0	0%	0%
Total	414	100%	15%
Total Statewide	**2778**		

Table 5-35

Carbon Tetrachloride

Stationary sources, such as chemical and petroleum refineries, account for all of the emissions of carbon tetrachloride.

San Francisco Bay Area - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.94	100%	63%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.94	100%	63%
Total Statewide	**1.48**		

Table 5-36

Chromium, Hexavalent

Approximately 70 percent of the hexavalent chromium emissions are from other mobile sources. Stationary sources such as electrical generation and fabricated metal product manufacturing contribute approximately four percent.

para-Dichlorobenzene

Emissions of *para*-dichlorobenzene are essentially all from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Francisco Bay Area - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< .01	5%	0%
Area-wide Sources	< .01	1%	0%
On-Road Mobile	0.02	24%	2%
Gasoline Vehicles	0.02	24%	2%
Diesel Vehicles	< .01	0%	0%
Other Mobile	0.07	70%	5%
Gasoline Fuel	0.02	22%	1%
Diesel Fuel	< .01	1%	0%
Other Fuel	0.05	47%	3%
Natural Sources	0	0%	0%
Total	0.10	100%	7%
Total Statewide	**1.52**		

Table 5-37

San Francisco Bay Area - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	3	1%	0%
Area-wide Sources	454	99%	19%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	456	100%	19%
Total Statewide	**2391**		

Table 5-38

Formaldehyde

Approximately 82 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 72 percent of the emissions of methylene chloride are from area-wide sources.

San Francisco Bay Area - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	207	6%	1%
Area-wide Sources	383	12%	2%
On-Road Mobile	962	30%	5%
Gasoline Vehicles	605	19%	3%
Diesel Vehicles	356	11%	2%
Other Mobile	1657	52%	9%
Gasoline Fuel	367	11%	2%
Diesel Fuel	829	26%	4%
Other Fuel	461	14%	2%
Natural Sources	0	0%	0%
Total	3208	100%	17%
Total Statewide	**19078**		

Table 5-39

San Francisco Bay Area - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	269	28%	4%
Area-wide Sources	687	72%	10%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	956	100%	15%
Total Statewide	**6557**		

Table 5-40

Perchloroethylene

Approximately 55 percent of the emissions of perchloroethylene are from such stationary sources as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

San Francisco Bay Area - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	331	45%	6%
Area-wide Sources	400	55%	7%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	730	100%	14%
Total Statewide	**5361**		

Table 5-41

Diesel Particulate Matter

Emissions of diesel particulate matter are primarily from mobile sources.

San Francisco Bay Area - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	74	2%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	1075	24%	3%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	1075	24%	3%
Other Mobile	3403	75%	11%
Gasoline Fuel	0	0%	0%
Diesel Fuel	3403	75%	11%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	4552	100%	15%
Total Statewide	**31002**		

Table 5-42

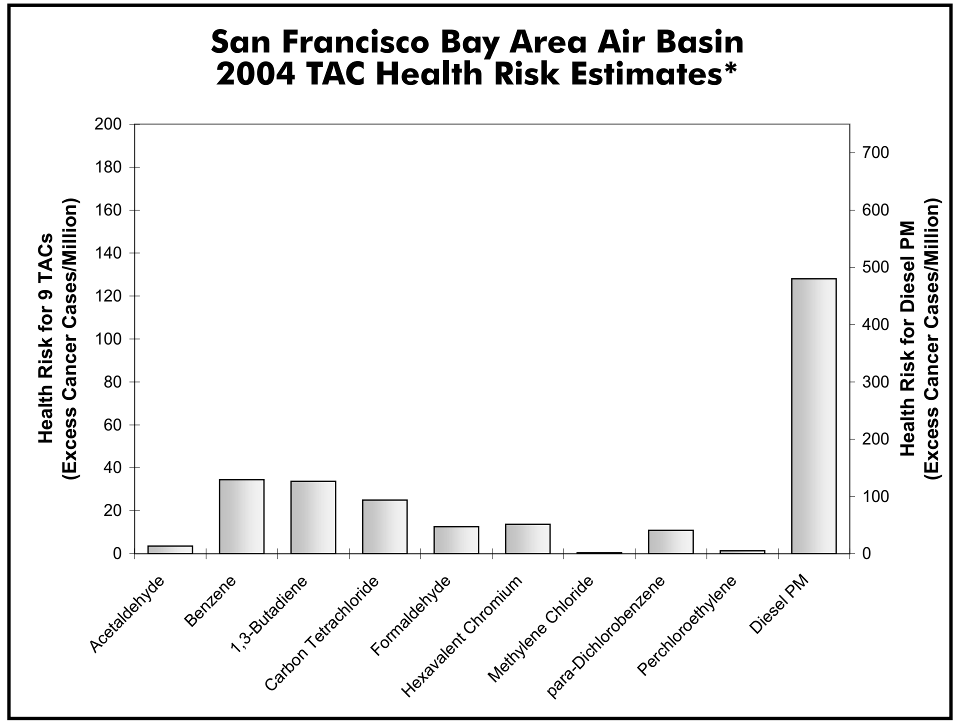
San Francisco Bay Area Air Basin

Air Quality and Health Risk

From 1990 through 2004, the ARB monitored ambient TAC concentrations at six sites in the San Francisco Bay Area Air Basin. Data for the entire time period are available from sites located in Fremont and San Francisco. The San Jose-Fourth Street site has measurements from 1990 through 2001; this site was relocated to San Jose-Jackson Street in mid-2002. Data are also available from a site at Concord from 1990 through 1999. In addition, there was a monitor at Richmond from 1990 through April 1997. This site was relocated to San Pablo and began sampling there in May 1997. At the end of February 2000, TAC monitoring was discontinued at the Concord and San Pablo sites, and additional data from these sites will not be available. Annual average concentration and associated health risk are unavailable for the year during a site move because neither site has a full year of data.

Annual average concentrations and health risks for the top ten TACs individually, as well as their cumulative health risk for the San Francisco Bay Area Air Basin are given in Table 5-43. Data for individual sites are provided in Appendix C. Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method used to analyze these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during later years, however, these data are included here for completeness.

Figure 5-13 shows 2004 health risks for the top ten TACs individually for the San Francisco Bay Area Air Basin. As indicated on the graph, the health risk data reflect the year 2004 except for diesel PM and carbon tetrachloride. The health risk for diesel PM reflects the year 2000, the most recent year for which estimated data are available. Carbon tetrachloride data for 2004 are not available due to problems with laboratory equipment and associated data reliability, so 2003 data are used instead. It is important to note that health risks shown here are based on an annual average concentration for all sites in the air basin. The health risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.



** Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2004.*

Figure 5-13

Diesel PM poses the greatest health risk among the ten TACs. The estimates for diesel PM was based on receptor modeling techniques. In the San Francisco Bay Area Air Basin, the estimated health risk for diesel PM in 2000 was 480 excess cancer cases per million people exposed for 70 years. The estimate is slightly lower than the estimated statewide value for the same year, and it represents a 36 percent drop between 1990 and 2000.

Trends and health risk for the nine other TACs are based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average for 1990-1992 time period was compared to that for 2002-2004. 1,3-butadiene and benzene pose the greatest risk among these nine TACs, and since 1990, their levels have been reduced by 65 percent and 77 percent, respectively. Methylene chloride and perchloroethylene also show significant reductions of 85 percent and 79 percent, respectively. However, *para*-dichlorobenzene and formaldehyde have increased by 26 and four percent, respectively. The increase in *para*-dichlorobenzene can be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations and those that are below the limit of detection.

In addition to the routine monitoring, a special study was conducted at two sites, located in the Crockett and Fruitvale/Oakland areas of the San Francisco Bay Area Air Basin between October 2001 and May 2003 (Crockett) and between November 2001 and April 2003 (Fruitvale). Monitoring included both TACs and criteria air pollutants. The Crockett community is located near high-risk facilities, including mobile source emissions. Oil refineries and major oil storage facilities are located in nearby cities to Crockett. Crockett is also the location of a major food processing operation and a heavy-rail transfer facility. The Fruitvale community lies between two major freeways that are a significant source of vehicular emissions. The Fruitvale area is also downwind of several industrial operations that are sources of pollution. Although not included in this almanac, data from Crockett, Fruitvale, and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

San Francisco Bay Area Air Basin
Annual Average Concentrations and Health Risks

San Francisco Bay Area Air Basin Toxic Air Contaminants-Annual Average Concentrations and Health Risks																
TAC*	**Conc./Risk**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.3	1.4	1.03	1.31	1.17	0.42	0.83	0.73	0.65	0.76	0.68	0.73	0.63	0.74	0.74
	Health Risk	6	7	5	6	6	2	4	4	3	4	3	4	3	4	4
Benzene	Annual Avg	2.18	1.82	1.49	1.49	1.4	1.26	0.71	0.61	0.71	0.6	0.56	0.425	0.454	0.439	0.372
	Health Risk	202	169	138	138	129	116	66	56	66	55	52	39	42	41	34
1,3-Butadiene	Annual Avg	0.36	0.29	0.28	0.37	0.29	0.28	0.22	0.19	0.22	0.17	0.15	0.13	0.14	0.10	0.09
	Health Risk	135	108	103	138	108	104	82	70	82	64	56	50	51	37	34
Carbon Tetrachloride	Annual Avg	0.13	0.13		0.11		0.10	0.08				0.09	0.09	0.09	0.10	
	Health Risk	34	33		29		26	21				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.23	0.2	0.19	0.25	0.13	0.12	0.1	0.1	0.12		0.074	0.096	0.091
	Health Risk			34	29	29	37	19	17	15	15	18		11	14	14
para-Dichlorobenzene	Annual Avg		0.12	0.12	0.12	0.11	0.13	0.14	0.12			0.11	0.14	0.15	0.15	0.17
	Health Risk		8	8	8	7	8	9	8			7	9	10	10	11
Formaldehyde	Annual Avg	1.87	1.73	1.43	1.56	1.66	2.06	2.62	1.85	1.76	2.09	1.77	2.32	2.57	2.22	1.71
	Health Risk	14	13	11	11	12	15	19	14	13	15	13	17	19	16	13
Methylene Chloride	Annual Avg	1.04	2.32	0.65	0.72	0.59	0.6	0.58	0.55			0.53	0.27	0.22	0.22	0.14
	Health Risk	4	8	2	2	2	2	2	2			2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.20	0.23	0.17	0.13	0.08	0.09	0.07	0.07			0.08	0.06	0.05	0.04	0.04
	Health Risk	8	9	7	5	3	4	3	3			3	2	2	2	1
Diesel PM**	*Annual Avg*	*(2.5)*					*(1.9)*					*(1.6)*				
	Health Risk	*(750)*					*(570)*					*(480)*				
Average Basin Risk***	Without Diesel PM	403	355	308	366	296	314	225	174	179	153	179	144	162	149	111
	With Diesel PM	*(1153)*					*(884)*					*(659)*				

* Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

** Diesel PM concentration estimates are based on receptor modeling techniques, and estimates are available only for selected years.

*** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

Table 5-43

San Joaquin Valley Air Basin
2005 Emission Inventory by Compound

Acetaldehyde

Approximately 78 percent of the emissions of acetaldehyde are from mobile sources. Area-wide sources such as residential wood combustion account for approximately 16 percent.

Benzene

The primary sources of benzene emissions in the San Joaquin Valley Air Basin are mobile sources (approximately 63 percent) and stationary sources (approximately 36 percent).

San Joaquin Valley - Acetaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	70	6%	1%
Area-wide Sources	185	16%	2%
On-Road Mobile	268	24%	3%
Gasoline Vehicles	102	9%	1%
Diesel Vehicles	166	15%	2%
Other Mobile	614	54%	8%
Gasoline Fuel	86	8%	1%
Diesel Fuel	375	33%	5%
Other Fuel	154	14%	2%
Natural Sources	0	0%	0%
Total	1136	100%	15%
Total Statewide	**7675**		

Table 5-44

San Joaquin Valley - Benzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	653	36%	5%
Area-wide Sources	13	1%	0%
On-Road Mobile	674	37%	5%
Gasoline Vehicles	629	35%	5%
Diesel Vehicles	45	2%	0%
Other Mobile	478	26%	4%
Gasoline Fuel	312	17%	3%
Diesel Fuel	102	6%	1%
Other Fuel	64	4%	1%
Natural Sources	< 1	0%	0%
Total	1820	100%	15%
Total Statewide	**12293**		

Table 5-45

1,3-Butadiene

Approximately 64 percent of the emissions of 1,3-butadiene are from mobile sources.

Carbon Tetrachloride

Emissions of carbon tetrachloride are all from stationary sources such as chemical and allied product manufacturers.

San Joaquin Valley - 1,3-Butadiene			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	3	1%	0%
Area-wide Sources	155	35%	6%
On-Road Mobile	138	32%	5%
Gasoline Vehicles	134	31%	5%
Diesel Vehicles	4	1%	0%
Other Mobile	142	32%	5%
Gasoline Fuel	74	17%	3%
Diesel Fuel	10	2%	0%
Other Fuel	58	13%	2%
Natural Sources	0	0%	0%
Total	439	100%	16%
Total Statewide	2778		

Table 5-46

San Joaquin Valley - Carbon Tetrachloride			
Emissions Source	tons/year	Percent Air Basin	Percent State
Stationary Sources	< .01	100%	1%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	< .01	100%	1%
Total Statewide	1.48		

Table 5-47

Chromium, Hexavalent

Approximately 62 percent of the hexavalent chromium emissions are from stationary sources such as chrome platers, aircraft and parts manufacturing, and fabricated metal product manufacturing.

San Joaquin Valley - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.13	62%	8%
Area-wide Sources	< .01	4%	0%
On-Road Mobile	0.01	7%	1%
Gasoline Vehicles	0.01	7%	1%
Diesel Vehicles	< .01	0%	0%
Other Mobile	0.06	27%	4%
Gasoline Fuel	0.01	6%	1%
Diesel Fuel	< .01	1%	0%
Other Fuel	0.04	20%	3%
Natural Sources	0	0%	0%
Total	0.20	100%	13%
Total Statewide	**1.52**		

Table 5-48

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Joaquin Valley - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	5	2%	0%
Area-wide Sources	236	98%	10%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	241	100%	10%
Total Statewide	**2391**		

Table 5-49

Formaldehyde

Approximately 65 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Approximately 81 percent of the emissions of methylene chloride are from paint removers/strippers, automotive brake cleaners, and other consumer products.

San Joaquin Valley - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	979	29%	5%
Area-wide Sources	219	6%	1%
On-Road Mobile	678	20%	4%
Gasoline Vehicles	346	10%	2%
Diesel Vehicles	332	10%	2%
Other Mobile	1507	45%	8%
Gasoline Fuel	260	8%	1%
Diesel Fuel	750	22%	4%
Other Fuel	497	15%	3%
Natural Sources	0	0%	0%
Total	3383	100%	18%
Total Statewide	**19078**		

Table 5-50

San Joaquin Valley - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	81	19%	1%
Area-wide Sources	354	81%	5%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	435	100%	7%
Total Statewide	**6557**		

Table 5-51

Perchloroethylene

Approximately 68 percent of the emissions of perchloroethylene are from such stationary sources as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

San Joaquin Valley - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	444	68%	8%
Area-wide Sources	209	32%	4%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	653	100%	12%
Total Statewide	**5361**		

Table 5-52

Diesel Particulate Matter

Emissions of diesel particulate matter are from mobile sources (approximately 88 percent) and stationary sources (approximately 12 percent).

San Joaquin Valley - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	471	12%	2%
Area-wide Sources	0	0%	0%
On-Road Mobile	915	23%	3%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	915	23%	3%
Other Mobile	2629	65%	8%
Gasoline Fuel	0	0%	0%
Diesel Fuel	2629	65%	8%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	4015	100%	13%
Total Statewide	**31002**		

Table 5-53

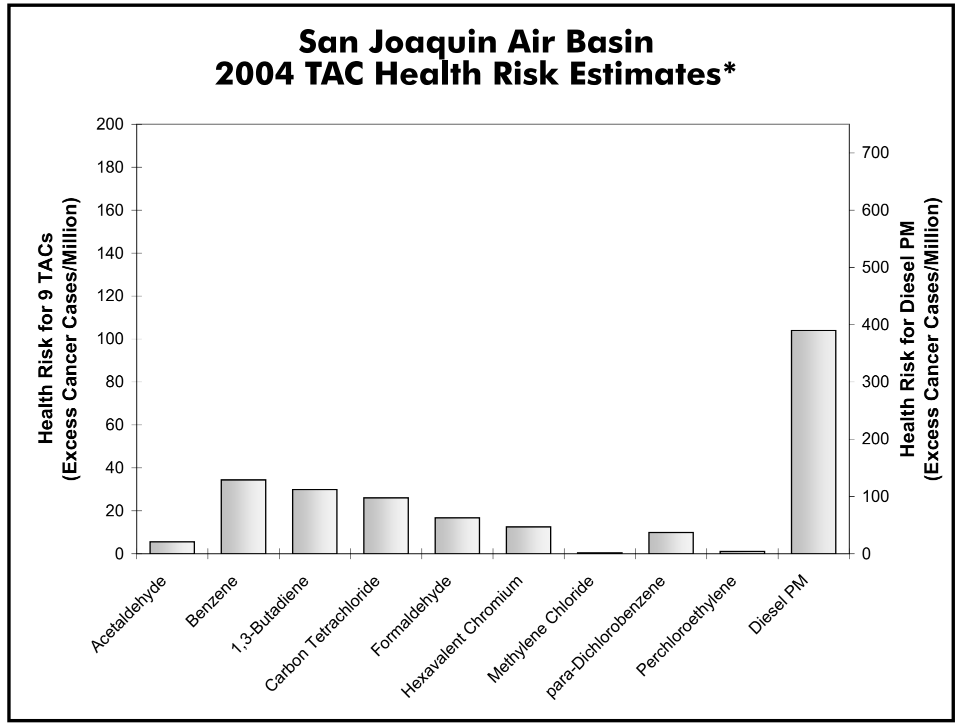
San Joaquin Valley Air Basin

Air Quality and Health Risk

From 1990 through 2004, the ARB monitored ambient TAC concentrations at six sites in the San Joaquin Valley Air Basin. Data for all years are available only for the Stockton site. Data are available for 1991 through 2004 at the Fresno-First Street site, for 1990 through 1993 at the Bakersfield-Chester Avenue site, and for 1995 through 2003 at the Bakersfield-5558 California Avenue site. Data are also available at the Modesto-14th Street site from 1990 through 1999. In addition, limited TAC data are available at the Modesto-I Street site during 1991 to 1997.

Annual average concentrations and associated health risks of the top ten TACs individually, as well as their cumulative health risk for the San Joaquin Valley Air Basin, are given in Table 5-54. Data for individual sites are provided in Appendix C. Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 are uncertain because the method used to analyze these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years, however, these data are included here for completeness.

Figure 5-14 shows 2004 health risks posed by the top ten TACs individually for the San Joaquin Valley Air Basin. As indicated on the graph, the health risk data reflect the year of 2004 except for diesel PM and carbon tetrachloride. The health risk for diesel PM reflects the year 2000, the most recent year for which estimated data are available. Carbon tetrachloride data for 2004 are not available due to problems with laboratory equipment and associated data reliability, therefore, 2003 data are used instead. It is important to note that health risks shown here are based on an annual average concentration for all sites in the air basin. The health risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.



** Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2004.*

Figure 5-14

Diesel PM poses the greatest health risk among the ten TACs. The estimates for diesel PM was based on receptor modeling techniques. The diesel PM health risk in the San Joaquin Valley Air Basin for 2000 was estimated at 390 excess cancer cases per million people exposed over a 70-year lifetime. While this value is lower than the estimated statewide health risk, it is similar to values estimated for other urbanized areas of the State such as the San Diego Air Basin and the Sacramento Valley Air Basin. The estimated diesel PM concentration and associated health risk decreased 50 percent between 1990 and 2000.

The trends and health risks for the nine other TACs are based on monitoring data. To examine their trends while minimizing the influences of weather and sampling schedule, the air basin average concentration for 1990-1992 time period was compared to that for 2002-2004. Among these nine TACs, 1,3-butadiene and benzene pose the greatest risks, and since 1990, they have been reduced by 68 percent and 77 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions; they have been reduced by 78 percent and 73 percent, respectively. However, *para*-dichlorobenzene increased by 29 percent. The increase can be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations and those that are below the limit of detection. Overall, the average concentrations and associated health risks of most TACs for the San Joaquin Valley Air Basin have been reduced since 1990, and they are lower than the statewide averages.

In addition to the routine monitoring, a special study was conducted at a site located in the Fresno area of the San Joaquin Valley Air Basin between June 2002 and August 2003. Monitoring included both TACs and criteria air pollutants. This Fresno community is located in a residential neighborhood near sources of motor vehicle pollution. There are a large number of children living in the community. Although not included in the almanac, data from Fresno and other community monitoring studies are being used in support of the ARB's Community Health Program. More information on the Community Health Program is available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

San Joaquin Valley Air Basin

Annual Average Concentrations and Health Risks

San Joaquin Valley Air Basin Toxic Air Contaminants-Annual Average Concentrations and Health Risks																
TAC*	**Conc./Risk**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.94	1.84	1.38	1.73	1.29	0.54	1.28	1.19	1.3	1.56	1.09	1.15	1.24	1.34	1.14
	Health Risk	9	9	7	8	6	3	6	6	6	8	5	6	6	7	6
Benzene	Annual Avg	2.45	2.11	1.36	1.32	1.33	1.16	0.73	0.71	0.76	0.69	0.63	0.538	0.552	0.463	0.372
	Health Risk	227	196	126	122	123	107	68	66	71	64	58	50	51	43	34
1,3-Butadiene	Annual Avg	0.41	0.36	0.24	0.34	0.32	0.26	0.22	0.20	0.23	0.18	0.16	0.15	0.15	0.10	0.08
	Health Risk	154	135	89	127	121	99	83	73	88	67	59	56	55	36	30
Carbon Tetrachloride	Annual Avg	0.13	0.13		0.11		0.10	0.08		0.11		0.10	0.09	0.09	0.10	
	Health Risk	34	34		29		26	20		30		25	23	24	26	
Chromium, Hexavalent	Annual Avg			0.23	0.21	0.19	0.28	0.13	0.11	0.1	0.1	0.12		0.086	0.078	0.083
	Health Risk			34	31	29	42	20	16	15	15	18		13	12	13
para-Dichlorobenzene	Annual Avg		0.11	0.11	0.13	0.11	0.11	0.1	0.13			0.11	0.13	0.15	0.15	0.15
	Health Risk		7	7	9	7	8	7	9			7	9	10	10	10
Formaldehyde	Annual Avg	2.45	1.81	1.46	1.67	1.8	2.1	2.96	2.77	2.86	3.44	2.61	3.08	3.13	3.02	2.27
	Health Risk	18	13	11	12	13	15	22	20	21	25	19	23	23	22	17
Methylene Chloride	Annual Avg	0.76	0.59	0.55	0.76	0.59	0.61	0.54	0.53	0.52	0.5	0.53	0.27	0.16	0.14	0.11
	Health Risk	3	2	2	3	2	2	2	2	2	2	2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.13	0.13	0.10	0.47	0.07	0.07	0.07	0.06	0.04		0.08	0.05	0.04	0.03	0.03
	Health Risk	5	5	4	19	3	3	3	2	2		3	2	2	1	1
Diesel PM**	*Annual Avg*	*(2.6)*					*(1.7)*					*(1.3)*				
	Health Risk	*(780)*					*(510)*					*(390)*				
Average Basin Risk***	Without Diesel PM	450	401	280	360	304	305	231	194	235	181	196	169	184	157	111
	With Diesel PM	***(1230)***					***(815)***					***(586)***				

* Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

** Diesel PM concentration estimates are based on receptor modeling techniques, and estimates are available only for selected years.

*** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

Table 5-54

San Diego Air Basin
2005 Emission Inventory by Compound

Acetaldehyde

Approximately 89 percent of the emissions of acetaldehyde are from mobile sources.

San Diego - Acetaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	7	1%	0%
Area-wide Sources	45	9%	1%
On-Road Mobile	146	29%	2%
Gasoline Vehicles	72	15%	1%
Diesel Vehicles	73	15%	1%
Other Mobile	300	60%	4%
Gasoline Fuel	70	14%	1%
Diesel Fuel	151	30%	2%
Other Fuel	78	16%	1%
Natural Sources	0	0%	0%
Total	497	100%	6%
Total Statewide	**7675**		

Table 5-55

Benzene

The primary sources of benzene emissions in the San Diego Air Basin are mobile sources (approximately 95 percent).

San Diego - Benzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	41	5%	0%
Area-wide Sources	4	0%	0%
On-Road Mobile	480	57%	4%
Gasoline Vehicles	460	54%	4%
Diesel Vehicles	20	2%	0%
Other Mobile	325	38%	3%
Gasoline Fuel	253	30%	2%
Diesel Fuel	41	5%	0%
Other Fuel	31	4%	0%
Natural Sources	0	0%	0%
Total	849	100%	7%
Total Statewide	**12293**		

Table 5-56

1,3-Butadiene

Approximately 98 percent of the emissions of 1,3-butadiene are from mobile sources.

Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

San Diego - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	1	1%	0%
Area-wide Sources	2	1%	0%
On-Road Mobile	99	52%	4%
Gasoline Vehicles	97	51%	3%
Diesel Vehicles	2	1%	0%
Other Mobile	88	46%	3%
Gasoline Fuel	60	31%	2%
Diesel Fuel	4	2%	0%
Other Fuel	25	13%	1%
Natural Sources	0	0%	0%
Total	190	100%	7%
Total Statewide	**2778**		

Table 5-57

San Diego - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.12	100%	8%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.12	100%	8%
Total Statewide	**1.48**		

Table 5-58

Chromium, Hexavalent

Approximately 77 percent of the hexavalent chromium emissions are from other mobile sources. Stationary sources account for approximately 17 percent.

para-Dichlorobenzene

All of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

San Diego - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.04	17%	3%
Area-wide Sources	< .01	1%	0%
On-Road Mobile	0.01	6%	1%
Gasoline Vehicles	0.01	6%	1%
Diesel Vehicles	< .01	0%	0%
Other Mobile	0.18	77%	12%
Gasoline Fuel	0.01	5%	1%
Diesel Fuel	< .01	0%	0%
Other Fuel	0.17	71%	11%
Natural Sources	0	0%	0%
Total	0.24	100%	16%
Total Statewide	**1.52**		

Table 5-59

San Diego - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0	0%	0%
Area-wide Sources	203	100%	9%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	203	100%	9%
Total Statewide	**2391**		

Table 5-60

Formaldehyde

Approximately 83 percent of the formaldehyde emissions are from mobile sources.

Methylene Chloride

Area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products account for approximately 82 percent of the emissions of methylene chloride.

San Diego - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	35	3%	0%
Area-wide Sources	56	4%	0%
On-Road Mobile	397	32%	2%
Gasoline Vehicles	250	20%	1%
Diesel Vehicles	147	12%	1%
Other Mobile	753	61%	4%
Gasoline Fuel	214	17%	1%
Diesel Fuel	303	24%	2%
Other Fuel	235	19%	1%
Natural Sources	0	0%	0%
Total	1240	100%	6%
Total Statewide	**19078**		

Table 5-61

San Diego - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	65	18%	1%
Area-wide Sources	306	82%	5%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	370	100%	6%
Total Statewide	**6557**		

Table 5-62

Perchloroethylene

Approximately 73 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants, manufacturers of aircraft parts and fabricated metal parts, and other stationary sources.

San Diego - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	477	73%	9%
Area-wide Sources	180	27%	3%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	657	100%	12%
Total Statewide	**5361**		

Table 5-63

Diesel Particulate Matter

Approximately 98 percent of the emissions of diesel particulate matter are from mobile sources.

San Diego - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	34	2%	0%
Area-wide Sources	0	0%	0%
On-Road Mobile	437	24%	1%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	437	24%	1%
Other Mobile	1327	74%	4%
Gasoline Fuel	0	0%	0%
Diesel Fuel	1327	74%	4%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	1798	100%	6%
Total Statewide	**31002**		

Table 5-64

San Diego Air Basin

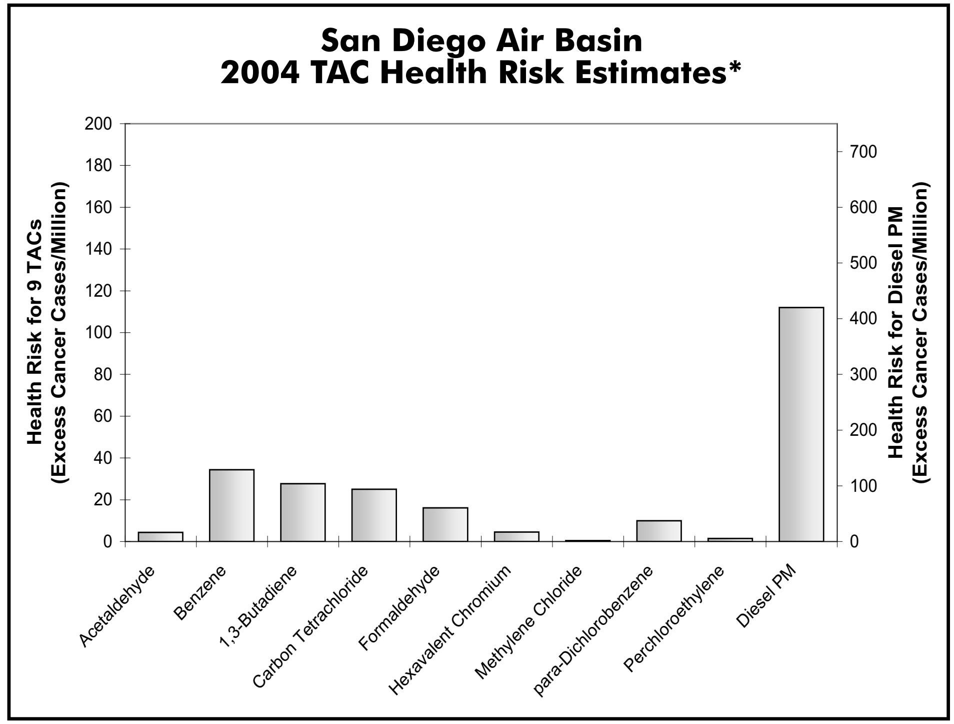
Air Quality and Health Risk

During 1990 through 2004, the ARB monitored ambient TAC concentrations at two sites in the San Diego Air Basin. The sites are located in Chula Vista and El Cajon. Annual average concentrations and associated health risks of the top ten TACs individually, as well as their cumulative health risk for the San Diego Air Basin are provided in Table 5-65. Data for individual sites in the air basin are provided in Appendix C.

Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 were uncertain because the method to analyze these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, data for years prior to 1996 are not directly comparable to data collected during the later years, however, these data are included here for completeness.

Figure 5-15 shows 2004 health risks posed by the top ten TACs individually for the San Diego Air Basin. As indicated on the graph, the health risk data reflect the year 2004 except for diesel PM and carbon tetrachloride. The health risk for diesel PM reflects the year 2000, the most recent year for which estimated data are available. Carbon tetrachloride data for 2004 are not available due to problems with laboratory equipment and associated data reliability, so 2003 data are used instead. It is important to note that health risks shown here are based on an annual average concentration for all sites in the air basin. The health risk at individual locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.

Diesel PM poses the greatest health risk among the ten TACs. The estimates for diesel PM was based on receptor modeling techniques. In the San Diego Air Basin, the estimated health risk for diesel PM in 2000 was 420 excess cancer cases per million people exposed over 70 years. While the health risk from diesel PM is lower than the estimated statewide value, it is comparable to the annual averages estimated for other urbanized areas such as the Sacramento Valley and San Joaquin Valley Air Basins. Diesel PM health risk has been reduced by 52 percent in the San Diego Air Basin between 1990 and 2000.



* Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2004.

Figure 5-15

Trends and health risks for the nine other TACs were based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for 1990-1992 time period were compared to those for 2002-2004. Among these nine TACs, 1,3-butadiene and benzene pose the greatest health risks. Since 1990, their risks have been reduced by 67 percent and 75 percent, respectively. Methylene chloride and perchloroethylene also show significant reductions of 84 percent and 82 percent, respectively. However, *para*-dichlorobenzene and formaldehyde have increased by 31 percent and five percent, respectively. The increase in *para*-dichlorobenzene can be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations and those that are below the limit of detection. In general, health risks from most TACs in the San Diego Air Basin have been reduced since 1990. Reductions in ambient TAC concentrations and health risk should continue, as new rules and regulations are implemented to control TACs. It is important to note that there may be other compounds that pose a significant health risk but are not monitored.

In addition to routine monitoring, a special study was conducted at a site located in the Logan Heights/Barrio Logan area of San Diego during the period of October 1999 through February 2001. Monitoring included both TACs and criteria air pollutants. The Barrio Logan community is located in a large urban area near major freeways, industrial sources, and neighborhood sources such as gas stations, dry cleaners, and automotive repair facilities. Although not included in this almanac, data from Barrio Logan and other community monitoring studies are being used in support of the ARB's Community Health Program. Copies of the full reports are available at *www.arb.ca.gov/ch/programs/sb25/sb25.htm*.

San Diego Air Basin

Annual Average Concentrations and Health Risks

San Diego Air Basin Toxic Air Contaminants-Annual Average Concentrations and Health Risks																
TAC*	**Conc./Risk**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.33	1.5	1.22	1.41	1.48	0.64	1.03	1	0.86	1.04	0.84	0.95	0.97	0.89	0.89
	Health Risk	6	7	6	7	7	3	5	5	4	5	4	5	5	4	4
Benzene	Annual Avg	2.25	1.7	1.48	1.16	1.39	0.98	0.76	0.76	0.76	0.86	0.65	0.505	0.491	0.483	0.371
	Health Risk	208	158	137	107	129	90	71	70	70	79	60	47	45	45	34
1,3-Butadiene	Annual Avg	0.33	0.26	0.26	0.31	0.31	0.24	0.21	0.20	0.20	0.22	0.16	0.14	0.12	0.09	0.07
	Health Risk	125	97	97	117	115	91	78	75	74	83	60	51	45	33	28
Carbon Tetrachloride	Annual Avg	0.13	0.13		0.10		0.10	0.08				0.09	0.09	0.09	0.09	
	Health Risk	35	34		27		26	20				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.24	0.19	0.16	0.18	0.11	0.11	0.1	0.1	0.1		0.045	0.05	0.03
	Health Risk			36	28	23	27	16	16	15	15	15		7	8	5
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.15	0.12	0.11	0.13				0.15	0.15	0.15	0.15
	Health Risk		7	8	8	10	8	7	8				10	10	10	10
Formaldehyde	Annual Avg	1.64	1.53	1.26	1.76	2.25	2.13	2.62	2.62	2.27	2.67	2.23	2.59	2.99	2.68	2.19
	Health Risk	12	11	9	13	17	16	19	19	17	20	16	19	22	20	16
Methylene Chloride	Annual Avg	0.59	0.83	1.34	1.13	0.73	0.63	0.59	0.57		0.53	0.76	0.17	0.16	0.16	0.13
	Health Risk	2	3	5	4	3	2	2	2		2	3	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.28	0.27	0.26	0.20	0.21	0.25	0.15	0.13			0.09	0.06	0.06	0.05	0.04
	Health Risk	11	11	11	8	8	10	6	5			4	2	2	2	1
Diesel PM**	*Annual Avg*	*(2.9)*					*(1.9)*					*(1.4)*				
	Health Risk	*(870)*					*(570)*					*(420)*				
Average Basin Risk***	Without Diesel PM	399	328	309	319	312	273	224	200	180	204	187	157	160	147	98
	With Diesel PM	***(1269)***					***(843)***					***(607)***				

* Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

** Diesel PM concentration estimates are based on receptor modeling techniques, and estimates are available only for selected years.

*** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

Table 5-65

Sacramento Valley Air Basin
2005 Emission Inventory by Compound

Acetaldehyde

Approximately 61 percent of the emissions of acetaldehyde are from mobile sources. Another 35 percent are from area-wide sources, including the burning of wood in residential fireplaces and wood stoves.

Sacramento Valley - Acetaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	27	3%	0%
Area-wide Sources	301	35%	4%
On-Road Mobile	148	17%	2%
Gasoline Vehicles	70	8%	1%
Diesel Vehicles	78	9%	1%
Other Mobile	377	44%	5%
Gasoline Fuel	96	11%	1%
Diesel Fuel	221	26%	3%
Other Fuel	60	7%	1%
Natural Sources	0	0%	0%
Total	854	100%	11%
Total Statewide	**7675**		

Table 5-66

Benzene

The primary sources of benzene emissions in the Sacramento Valley Air Basin are mobile sources (approximately 84 percent).

Sacramento Valley - Benzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	163	15%	1%
Area-wide Sources	8	1%	0%
On-Road Mobile	469	44%	4%
Gasoline Vehicles	447	42%	4%
Diesel Vehicles	21	2%	0%
Other Mobile	428	40%	3%
Gasoline Fuel	343	32%	3%
Diesel Fuel	60	6%	0%
Other Fuel	25	2%	0%
Natural Sources	0	0%	0%
Total	1068	100%	9%
Total Statewide	**12293**		

Table 5-67

1,3-Butadiene

Approximately 82 percent of the emissions of 1,3-butadiene are from mobile sources.

Carbon Tetrachloride

Stationary sources such as chemical and allied product manufacturers account for all of the emissions of carbon tetrachloride.

Sacramento Valley - 1,3-Butadiene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	42	17%	2%
On-Road Mobile	95	38%	3%
Gasoline Vehicles	93	38%	3%
Diesel Vehicles	2	1%	0%
Other Mobile	109	44%	4%
Gasoline Fuel	82	33%	3%
Diesel Fuel	6	2%	0%
Other Fuel	22	9%	1%
Natural Sources	0	0%	0%
Total	247	100%	9%
Total Statewide	**2778**		

Table 5-68

Sacramento Valley - Carbon Tetrachloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.05	100%	3%
Area-wide Sources	0	0%	0%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	0.05	100%	3%
Total Statewide	**1.48**		

Table 5-69

Chromium, Hexavalent

Approximately 52 percent of the Hexavalent Chromium emissions are from other mobile sources.

Sacramento Valley - Chromium, Hexavalent			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	0.02	29%	1%
Area-wide Sources	< .01	6%	0%
On-Road Mobile	< .01	12%	1%
Gasoline Vehicles	< .01	12%	1%
Diesel Vehicles	< .01	0%	0%
Other Mobile	0.03	52%	2%
Gasoline Fuel	0.02	25%	1%
Diesel Fuel	< .01	1%	0%
Other Fuel	0.02	25%	1%
Natural Sources	0	0%	0%
Total	0.07	100%	4%
Total Statewide	**1.52**		

Table 5-70

para-Dichlorobenzene

Most of the emissions of *para*-dichlorobenzene are from consumer products (non-aerosol insect repellants and solid/gel air fresheners).

Sacramento Valley - *para*-Dichlorobenzene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	< 1	0%	0%
Area-wide Sources	171	100%	7%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	171	100%	7%
Total Statewide	**2391**		

Table 5-71

Formaldehyde

Approximately 71 percent of the formaldehyde emissions are from mobile sources, and 18 percent are from area-wide sources.

Sacramento Valley - Formaldehyde			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	188	10%	1%
Area-wide Sources	340	18%	2%
On-Road Mobile	387	21%	2%
Gasoline Vehicles	230	13%	1%
Diesel Vehicles	157	9%	1%
Other Mobile	924	50%	5%
Gasoline Fuel	290	16%	2%
Diesel Fuel	443	24%	2%
Other Fuel	191	10%	1%
Natural Sources	0	0%	0%
Total	1840	100%	10%
Total Statewide	**19078**		

Table 5-72

Methylene Chloride

Approximately 71 percent of the emissions of methylene chloride are from area-wide sources such as paint removers/strippers, automotive brake cleaners, and other consumer products.

Sacramento Valley - Methylene Chloride			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	105	29%	2%
Area-wide Sources	256	71%	4%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	362	100%	6%
Total Statewide	**6557**		

Table 5-73

Perchloroethylene

Approximately 66 percent of the emissions of perchloroethylene are from stationary sources such as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts.

Sacramento Valley - Perchloroethylene			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	299	66%	6%
Area-wide Sources	151	34%	3%
On-Road Mobile	0	0%	0%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	0	0%	0%
Other Mobile	0	0%	0%
Gasoline Fuel	0	0%	0%
Diesel Fuel	0	0%	0%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	450	100%	8%
Total Statewide	**5361**		

Table 5-74

Diesel Particulate Matter

Approximately 89 percent emissions of diesel particulate matter are from mobile sources.

Sacramento Valley - Diesel PM			
Emissions Source	**tons/year**	**Percent Air Basin**	**Percent State**
Stationary Sources	273	11%	1%
Area-wide Sources	0	0%	0%
On-Road Mobile	489	21%	2%
Gasoline Vehicles	0	0%	0%
Diesel Vehicles	489	21%	2%
Other Mobile	1617	68%	5%
Gasoline Fuel	0	0%	0%
Diesel Fuel	1617	68%	5%
Other Fuel	0	0%	0%
Natural Sources	0	0%	0%
Total	2379	100%	8%
Total Statewide	**31002**		

Table 5-75

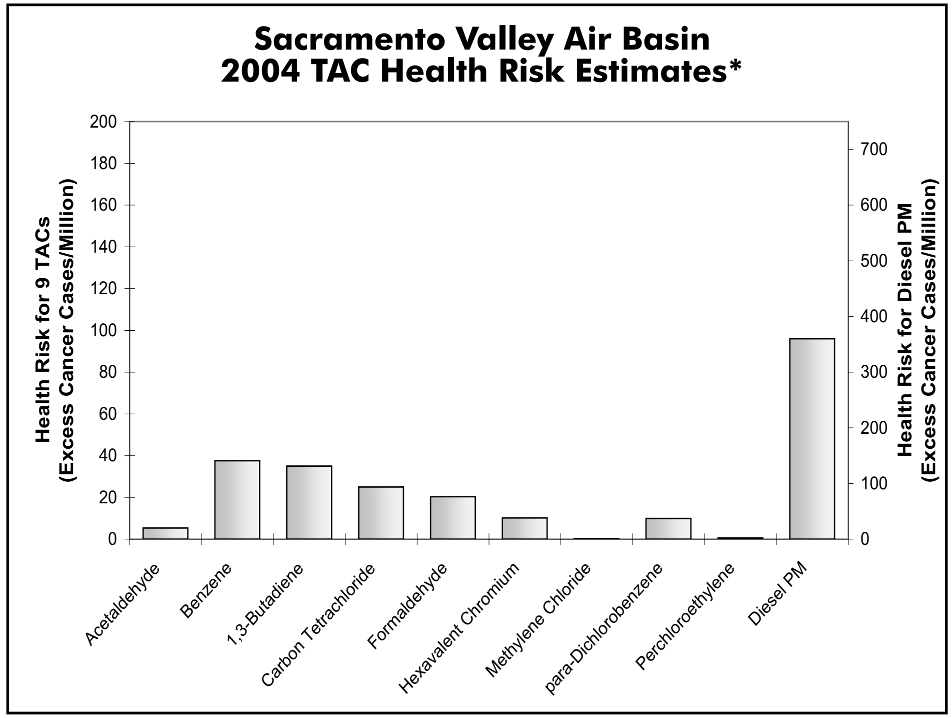
Sacramento Valley Air Basin

Air Quality and Health Risk

Unlike the other air basins described in this almanac, TAC monitoring in the Sacramento Valley Air Basin has not been continuous at any site. TAC concentrations were monitored at the Chico-Salem Street site during 1990 through the middle of 1992. The site was then moved to Chico-Manzanita Avenue. While there was monitoring in the Chico area for 1992, an annual average is not included here because neither site has a full year of data. Similarly, TAC concentrations were monitored at the Citrus Heights site during 1990 through part of 1993, when the site was relocated to Roseville. Again, annual average concentration and associated health risk are not available for the year during which the site was moved because neither site has a full year of data.

Table 5-76 gives annual average concentrations and health risks for the top ten TACs individually, as well as their cumulative health risk for the Sacramento Valley Air Basin. Data for individual sites are provided in Appendix C. Although acetaldehyde and formaldehyde data were collected beginning in 1990, concentration and health risk values prior to 1996 are uncertain because the method to analyze these samples underestimated the actual concentrations. The bias was corrected by a method change in 1996; however, the ARB was unable to develop a correction factor for the earlier data. Therefore, the data for years prior to 1996 are not directly comparable to data collected during the later years, however, these data are included here for completeness.

Figure 5-16 is based on all data collected in the Sacramento Valley Air Basin and shows the estimated annual average health risks for the top ten TACs in this area. As shown in the graph, the health risk estimates for eight of the TACs measured by the ambient network reflect 2004. Carbon tetrachloride data for 2004 are not available due to problems with laboratory equipment and associated data reliability, therefore, 2003 data are used instead. The health risk for diesel PM reflects the year 2000, the most recent year for which estimated data are available. It is important to note that health risks shown here are based on only two areas in the air basin, and other locations may be higher or lower than the average for the air basin, depending on the impact of nearby sources.



** Data for Diesel PM reflect 2000; carbon tetrachloride reflect 2003; all other TACs reflect 2004.*

Figure 5-16

Diesel PM poses the greatest health risk among the ten TACs. The estimates for diesel PM was based on receptor modeling techniques. The ARB estimated the health risk for diesel PM in 2000 to be 360 excess cancer cases per million people in the Sacramento Valley Air Basin. This is about half the estimated statewide health risk, and it is similar to that for the San Joaquin Valley. It was reduced by 52 percent between 1990 and 2000.

Trends and health risks for the other nine TACs were based on monitoring data. To examine their trends while minimizing the annual variation due to meteorology and sampling schedule, the air basin average concentration for 1990-1992 time period were compared to those for 2002-2004. Both 1,3-butadiene and benzene pose substantial health risk, and they have been reduced by 69 percent and 76 percent, respectively. Methylene chloride and perchloroethylene also show substantial reductions of 87 percent and 72 percent, respectively. In contrast, *para*-dichlorobenzene and formaldehyde show increases of nine percent and 23 percent, respectively. The increase in *para*-dichlorobenzene can be attributed to a mechanism that ARB's Monitoring and Laboratory Division used for estimating very low concentrations and those that are below the limit of detection.

Sacramento Valley Air Basin
Annual Average Concentrations and Health Risks

Sacramento Valley Air Basin Toxic Air Contaminants-Annual Average Concentrations and Health Risks																
TAC*	**Conc./Risk**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.29			1.37	1.04	0.39	1.03	1.05	0.92	1.23	0.83	0.74	1.14	1.04	1.09
	Health Risk	6			7	5	2	5	5	4	6	4	4	6	5	5
Benzene	Annual Avg	2.02	1.88	1.35	1	1.02	0.8	0.56	0.55	0.5	0.56	0.45	0.422	0.443	0.406	0.406
	Health Risk	187	174	125	92	95	74	51	51	47	52	42	39	41	38	38
1,3-Butadiene	Annual Avg	0.38	0.33	0.28	0.29	0.22	0.19	0.18	0.16	0.15	0.13	0.12	0.13	0.12	0.09	0.09
	Health Risk	142	125	106	108	83	70	66	60	58	48	45	47	44	35	35
Carbon Tetrachloride	Annual Avg	0.12	0.12		0.11		0.10	0.08				0.09	0.09	0.09	0.09	
	Health Risk	33	32		29		26	21				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.17	0.14	0.13	0.18	0.11	0.1	0.1	0.1	0.1	0.1	0.053	0.05	0.068
	Health Risk			26	21	19	26	16	15	15	15	15	15	8	8	10
para-Dichlorobenzene	Annual Avg			0.11	0.1	0.2	0.14	0.11	0.14			0.1	0.13	0.15	0.15	0.15
	Health Risk			7	7	14	9	7	10			7	9	10	10	10
Formaldehyde	Annual Avg	1.57			1.77	1.75	1.91	2.76	2.92	2.52	3.61	2.51	2.41	3.79	3.53	2.76
	Health Risk	12			13	13	14	20	22	19	27	18	18	28	26	20
Methylene Chloride	Annual Avg	0.65	0.56	0.55	0.98	0.66	0.53	0.54	0.52		0.6	0.57	0.29	0.08	0.08	0.07
	Health Risk	2	2	2	3	2	2	2	2		2	2	1	<1	<1	<1
Perchloroethylene	Annual Avg	0.07	0.07	0.06	0.05	0.17	0.05	0.06	0.05			0.06	0.03	0.03	0.02	0.02
	Health Risk	3	3	3	2	7	2	2	2			2	1	1	<1	<1
Diesel PM**	*Annual Avg*	*(2.5)*					*(1.6)*					*(1.2)*				
	Health Risk	*(750)*					*(480)*					*(360)*				
Average Basin Risk***	Without Diesel PM	385	336	269	282	238	225	190	167	143	150	160	157	162	147	118
	With Diesel PM	*(1135)*					*(705)*					*(520)*				

* Concentrations for Hexavalent chromium are expressed as ng/m3 and concentrations for diesel PM are expressed as ug/m3. Concentrations for all other TACs are expressed as parts per billion.

** Diesel PM concentration estimates are based on receptor modeling techniques, and estimates are available only for selected years.

*** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. It reflects only those compounds listed in this table and only those with data for that year. There may be other significant compounds for which we do not monitor or have health risk information. Additional information about interpreting the toxic air contaminant air quality trends can be found in Chapter 1, *Interpreting the Emission and Air Quality Statistics.*

Table 5-76

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APPENDIX A

County Level Emissions and Air Quality by Air Basin

Appendix A: *County Level Emissions and Air Quality by Air Basin*

List of Tables

List of Tables (continued)

List of Tables (continued)

List of Tables (continued)

Introduction

This appendix contains criteria pollutant emission trends and forecasts and air quality trend data for each of California's 15 air basins. The emissions data are summarized first, by county or county portion within the air basin. Emissions data are included for the ozone precursors NO_x and ROG, directly emitted PM_{10}, directly emitted $PM_{2.5}$, and CO. The values represent the total tons of pollutant emissions per average day, listed every five years, from 1975 to 2020. In addition to these data, tables listing the highest emitting facilities for NO_x, ROG, PM_{10}, and $PM_{2.5}$, by air basin, are also included. The lists of high emitting facilities consist of only the top ten facilities exceeding 100 tons per year. The emission totals are the most recent data available from the respective district agencies. Some facilities may have reduced or increased emissions since these data were collected, and these changes will be reflected in subsequent editions of the almanac. Finally, the lists do not include military bases, landfills, or airports.

The air quality trend statistics for each county or county portion are also organized alphabetically, by air basin. The time period covered is 1984 through 2003 for ozone, CO, NO_2, and SO_2 and 1988 through 2003 for PM_{10}. Tables for some areas include blanks, indicating that no monitoring data are available or data are incomplete for a given statistic. In a number of cases, tables are completely blank. These blank tables are included for completeness, but the lack of data is noted on the tables. (Note: $PM_{2.5}$ air quality data are now included in Appendix A due to sufficient data being available for developing trends. $PM_{2.5}$ air quality data are also available statewide in Chapter 3 and summarized by air basin in Chapter 2 and in Appendix B.)

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value air quality statistics reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour average carbon monoxide concentrations in Imperial County in the Salton Sea Air Basin are below the levels of the State and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards are violated. The CO concentrations in this air basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing set of sites in the Salton Sea Air Basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at *www.arb.ca.gov/aqd/namslams/namslams.htm*.

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration. In contrast to the peak and maximum statistics, the counts of days above a standard generally reflect a composite, countywide value (in other words, a count of the total number of days an exceedance occurred at any site in the county. The exception is PM_{10}. The calculated days above the State and national 24-hour standards for this pollutant reflect the number of exceedance days at the high site, only.

Great Basin Valleys Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	2	2	2	2	2	2	2	2	2	2	5	5	5	5	6	6	6	6	6	6
Inyo*	5	5	4	4	4	3	3	3	2	2	7	7	7	6	5	4	4	4	4	3
Mono*	3	4	4	4	3	3	3	2	2	2	7	8	8	8	8	8	8	8	8	8
Air Basin Total	10	11	10	10	9	8	8	7	6	6	19	20	20	20	19	18	18	18	18	18

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	7	7	7	7	7	8	8	8	8	8	60	61	62	63	65	65	65	65	65	65
Inyo*	826	826	826	826	825	824	149	42	43	44	51	51	45	41	30	22	19	15	12	11
Mono*	31	34	34	37	38	38	39	40	41	42	61	67	66	63	59	54	53	52	51	52
Air Basin Total	864	868	868	870	870	870	196	89	91	94	171	179	173	168	154	141	136	132	129	128

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alpine	5	5	5	5	5	5	5	5	5	6
Inyo*	127	127	127	126	126	126	25	9	9	9
Mono*	17	17	17	18	18	18	18	19	19	19
Air Basin Total	148	149	149	150	150	150	49	33	33	34

* Values for these counties include emissions from the Owens and Mono Lake Beds.

Table A-1

Great Basin Valleys Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Coso Operating Company (Steam Plant)	Little Lake	165

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-2

Lake County Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	7	8	9	10	9	8	7	6	5	4	11	13	15	14	14	12	11	9	8	8

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	8	9	11	11	11	12	12	12	12	13	92	103	117	111	103	88	80	71	62	57

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lake	3	3	4	4	4	5	5	5	5	5

Table A-3

Lake County Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-4

Lake Tahoe Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	4	4	4	5	4	4	4	3	3	2	8	7	7	7	6	6	5	5	5	5
Placer	2	1	2	2	2	2	2	2	2	1	6	3	3	3	3	3	2	2	2	2
Air Basin Total	7	6	6	7	7	6	6	5	4	4	14	9	9	10	9	8	8	7	7	7

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	2	2	3	3	3	4	4	4	4	5	100	76	68	60	49	41	37	33	31	30
Placer	1	1	1	1	1	1	2	2	2	2	77	33	33	27	23	18	16	13	12	11
Air Basin Total	3	4	4	4	5	5	5	6	6	6	177	109	101	87	72	59	52	47	43	41

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
El Dorado	1	1	2	2	2	2	2	2	2	2
Placer	0	1	1	1	1	1	1	1	1	1
Air Basin Total	2	2	2	3	3	3	3	3	3	3

A portion of El Dorado County lies within the Mountain Counties Air Basin. Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Table A-5

Lake Tahoe Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-6

Mojave Desert Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	53	31	38	51	42	41	37	36	35	35	65	47	32	28	17	15	13	12	11	11
Los Angeles	21	27	30	38	31	30	27	23	20	18	37	40	42	43	29	24	23	22	23	25
Riverside	4	3	4	10	6	5	2	1	1	1	7	7	9	4	3	2	3	4	4	4
San Bernardino	124	145	128	155	136	139	112	103	101	100	33	39	48	62	52	43	39	35	33	33
Air Basin Total	201	206	200	254	214	215	177	163	156	154	142	133	130	137	101	84	78	72	71	73

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	41	32	29	45	27	31	28	29	29	30	743	483	257	197	130	108	94	79	69	64
Los Angeles	35	38	37	35	30	31	34	35	36	37	105	177	217	260	168	118	93	75	65	60
Riverside	8	9	9	10	10	9	8	8	8	9	12	10	13	18	14	11	9	7	7	6
San Bernardino	129	133	182	175	148	151	154	163	174	185	130	212	285	435	341	265	213	168	137	121
Air Basin Total	213	212	257	265	215	222	225	235	248	260	990	883	771	909	653	502	408	329	278	251

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Kern	19	13	11	22	9	10	10	10	10	11
Los Angeles	9	10	9	9	8	8	9	10	10	10
Riverside	2	2	2	2	2	2	2	2	2	2
San Bernardino	54	55	82	78	65	64	63	67	72	77
Air Basin Total	84	80	105	111	85	85	85	89	95	101

A portion of Kern County lies within the San Joaquin Valley Air Basin. A portion of Los Angeles County lies within the South Coast Air Basin. Portions of Riverside County lie within the Salton Sea and South Coast Air Basins. A portion of San Bernardino County lies within the South Coast Air Basin.

Table A-7

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Mojave Desert Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_X)		
Facility Name	**City**	**Tons per Year**
Cemex - Black Mountain Quarry	Apple Valley	4754
TXI Riverside Cement Company	Oro Grande	4235
California Portland Cement	Mojave	2942
Mitsubishi Cement 2000	Lucerne Valley	2770
Searles Valley Minerals	Trona	2021
National Cement	Lebec	1283
PG&E Topock Compressor Station	Needles	1140
Southern California Gas	Needles	760
Lehigh Southwest Cement	Monolith	753
Reliant Energy	Daggett	665

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Cemex - Black Mountain Quarry	Apple Valley	187
PG&E Hinkley Compressor Station	Hinkley	135
Commercial Wood Products	Adelanto	123

Table A-8

Mojave Desert Air Basin
High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Mitsubishi Cement 2000	Lucerne Valley	1468
Cemex - Black Mountain Quarry	Apple Valley	955
TXI Riverside Cement Company	Oro Grande	753
Antelope Valley Aggregate	Littlerock	345
California Portland Cement	Mojave	329
Searles Valley Minerals	Trona	320
National Cement	Lebec	295
Cemex California - River Plant	Victorville	258
US Borax	Boron	248
Molycorp (Cement)	Mountain Pass	238

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Mitsubishi Cement 2000	Lucerne Valley	928
Cemex - Black Mountain Quarry	Apple Valley	413
TXI Riverside Cement Company	Oro Grande	343
Searles Valley Minerals	Trona	226
National Cement	Lebec	198
California Portland Cement	Mojave	171
Lehigh Southwest Cement	Monolith	137
Antelope Valley Aggregate	Littlerock	129
US Borax	Boron	101

Table A-8 (continued)

Mountain Counties Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	5	6	7	9	9	7	7	6	5	5	10	11	11	12	10	9	9	8	8	8
Calaveras	5	12	6	7	6	5	5	4	3	3	9	10	11	12	13	12	10	9	8	7
El Dorado	9	12	12	13	12	9	8	6	5	4	17	24	23	22	19	15	13	12	11	11
Mariposa	2	3	3	4	3	3	3	2	2	2	7	8	8	8	9	8	7	6	6	5
Nevada	10	13	14	15	12	10	9	7	6	5	14	19	21	20	17	15	14	13	12	12
Placer	4	6	5	5	5	5	4	4	3	3	4	9	5	5	4	4	4	3	3	3
Plumas	8	10	10	11	9	9	8	7	7	6	12	15	14	15	17	17	16	16	16	17
Sierra	1	1	1	1	1	1	1	1	1	1	3	3	3	3	4	4	4	4	3	3
Tuolumne	14	16	15	17	15	14	13	12	11	10	27	29	29	30	29	27	26	25	24	24
Air Basin Total	58	79	72	82	73	64	58	50	43	38	101	126	125	129	122	111	103	95	91	90

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	6	6	6	7	9	9	9	10	11	11	52	59	63	71	56	46	43	37	33	30
Calaveras	29	10	10	11	11	11	11	12	12	13	63	81	76	82	76	63	56	49	42	38
El Dorado	10	12	13	15	16	16	17	18	19	20	115	152	157	153	129	100	87	77	71	69
Mariposa	8	9	10	10	10	10	10	11	11	11	47	52	53	56	54	48	44	40	37	35
Nevada	12	14	16	18	19	19	20	20	21	22	108	141	157	148	123	104	94	84	77	74
Placer	5	7	6	7	7	8	8	8	9	9	31	35	39	37	32	32	28	24	21	20
Plumas	17	19	20	19	19	19	19	19	20	20	132	143	142	153	151	142	141	138	136	136
Sierra	11	12	12	11	12	12	11	11	12	12	27	26	27	30	30	31	27	26	25	25
Tuolumne	27	29	29	32	30	30	30	31	31	31	291	303	308	320	305	286	279	271	265	262
Air Basin Total	126	119	122	130	132	135	138	141	145	150	866	993	1023	1051	957	852	799	746	707	690

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9

Mountain Counties Air Basin

County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Amador	2	3	3	3	4	5	5	5	5	5
Calaveras	11	5	5	5	5	5	5	5	5	5
El Dorado	5	5	6	7	7	7	7	7	8	8
Mariposa	4	4	4	4	4	4	4	4	5	5
Nevada	6	7	8	9	9	9	9	9	9	10
Placer	2	3	2	3	2	2	3	3	3	3
Plumas	8	9	10	9	9	9	9	8	8	9
Sierra	3	3	4	3	3	3	3	3	3	3
Tuolumne	20	22	21	23	22	22	22	22	22	22
Air Basin Total	61	62	62	65	66	66	66	67	68	70

A portion of El Dorado County lies within the Lake Tahoe Air Basin. Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Table A-9 (continued)

Mountain Counties Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Sierra Pacific Industries	Quincy	311
Pacific-Ultrapower	Jamestown	169
Collins Pine	Chester	151
Sierra Pacific Industries	Sonora	137
Sierra Pacific Industries	Loyalton	129

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	263

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	518
Sierra Pacific Ind. Standard	Sonora	118

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Sierrapine Ltd Ampine Division	Martell	414
Sierra Pacific Ind. Standard	Sonora	109

Table A-10

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North Central Coast Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	121	135	96	96	91	77	57	50	43	39	96	79	74	67	56	48	42	39	37	37
San Benito	8	9	9	11	10	8	8	7	6	5	11	11	11	11	9	8	7	7	7	7
Santa Cruz	22	25	29	32	27	24	21	17	14	12	44	43	44	40	30	26	22	20	20	20
Air Basin Total	151	169	135	139	128	110	85	74	63	57	152	133	129	118	95	82	71	66	64	63

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	36	39	36	37	37	42	45	50	52	54	685	579	588	511	382	345	277	263	235	218
San Benito	13	13	15	16	13	15	16	17	17	17	87	84	88	81	68	61	62	63	60	58
Santa Cruz	11	12	14	15	13	14	14	14	15	15	254	258	264	233	169	135	108	86	71	63
Air Basin Total	59	64	65	68	64	70	75	81	84	87	1026	921	940	826	620	541	446	412	365	339

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Monterey	18	20	16	16	15	18	19	22	23	23
San Benito	5	5	7	7	5	6	7	7	8	8
Santa Cruz	5	5	6	6	5	5	5	5	6	6
Air Basin Total	28	30	28	29	26	29	31	35	36	36

Table A-11

North Central Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
RMC Pacific Materials	Davenport	705
Duke Energy	Moss Landing	193
Calpine King City Cogen	King City	166

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
RMC Pacific Materials	Davenport	192
Duke Energy	Moss Landing	110

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
RMC Pacific Materials	Davenport	116
Duke Energy	Moss Landing	109

Table A-12

North Coast Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	5	5	4	4	3	3	2	2	1	1	10	11	8	7	6	6	5	5	5	5
Humboldt	43	43	36	37	30	28	23	20	17	15	65	41	34	31	25	22	20	18	17	17
Mendocino	22	21	20	22	18	15	14	11	9	8	31	26	20	19	17	15	13	12	11	11
Sonoma	15	22	26	24	22	20	17	14	11	9	14	22	21	23	19	16	13	11	10	10
Trinity	2	3	3	3	2	2	2	2	1	1	7	8	6	6	6	6	5	5	4	4
Air Basin Total	87	94	90	91	76	69	58	48	40	34	127	108	88	87	74	65	56	51	47	46

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	8	9	9	10	10	10	10	11	11	11	130	127	115	113	103	96	93	91	89	87
Humboldt	29	29	27	25	23	22	22	22	23	23	331	295	264	247	192	159	146	129	116	108
Mendocino	19	16	17	19	19	20	21	23	24	26	162	152	145	141	112	89	78	67	58	54
Sonoma	4	5	5	8	6	6	6	6	6	6	70	157	165	155	119	96	72	65	55	50
Trinity	16	19	20	19	20	18	18	17	17	17	70	75	74	75	66	60	57	54	51	49
Air Basin Total	76	78	79	81	78	77	78	79	81	84	762	806	763	731	593	500	446	406	369	348

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Del Norte	5	6	6	6	6	6	6	6	6	6
Humboldt	18	17	16	13	11	11	11	10	10	11
Mendocino	10	7	7	7	7	7	7	8	8	9
Sonoma	2	2	3	4	3	3	3	3	3	3
Trinity	6	7	7	6	6	6	6	6	6	6
Air Basin Total	41	39	37	37	34	33	33	33	33	34

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Table A-13

North Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
PG&E Humboldt Bay	Eureka	435
The Pacific Lumber Company	Scotia	321
Samoa-Pacific Cellulose	Samoa	308
Fairhaven Power Company	Fairhaven	280
Humboldt Flakeboard Panels	Arcata	140

Reactive Organic Gases ($_{ROG}$)		
Facility Name	**City**	**Tons per Year**
Pacific Lumber Company	Scotia	116
Samoa-Pacific Cellulose	Samoa	104

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Fairhaven Power Company	Fairhaven	109

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Fairhaven Power Company	Fairhaven	102

Table A-14

Northeast Plateau Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	9	9	9	9	8	8	7	6	5	5	11	15	14	14	13	12	12	11	11	11
Modoc	6	6	5	5	5	5	4	4	4	3	6	7	6	6	5	4	4	4	4	4
Siskiyou	18	19	18	18	17	15	12	10	9	8	29	29	28	28	26	23	23	22	21	21
Air Basin Total	34	34	32	32	30	28	23	20	18	16	46	50	48	47	44	40	39	37	36	36

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	19	19	20	21	20	23	22	22	22	23	65	81	81	76	73	64	58	54	51	49
Modoc	18	18	19	19	18	18	18	17	17	17	31	33	31	30	25	20	18	16	15	14
Siskiyou	32	34	33	33	33	33	33	33	33	34	355	347	334	334	309	279	270	261	254	249
Air Basin Total	69	71	72	73	71	74	73	72	72	74	451	462	446	440	407	363	346	331	319	312

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Lassen	7	7	7	7	7	7	7	7	7	7
Modoc	6	5	5	5	5	5	5	4	4	4
Siskiyou	20	21	19	19	19	19	19	19	19	19
Air Basin Total	32	33	31	32	31	31	30	30	30	30

Table A-15

Northeast Plateau Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_X)		
Facility Name	**City**	**Tons per Year**
H.L. Power Company	Wendel	150
Tionesta Compressor Station	Tulelake	100

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-16

Outer Continental Shelf
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Air Basin Total	145	132	129	140	157	183	207	244	299	373	5	4	8	9	7	6	8	9	10	13

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Air Basin Total	11	10	10	11	12	14	17	21	26	33	13	12	13	13	15	17	19	23	27	34

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)										SO_X Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Air Basin Total	11	10	10	11	12	14	16	20	25	32	82	75	74	78	89	104	122	149	186	243

Table A-17

Outer Continental Shelf
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Point Arguello Platform Harvest	Outer Continental Shelf	151
Exxon - SYU Project (Offshore Platforms)	Outer Continental Shelf	138

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Exxon - Syu Project (Offshore Platforms)	Outer Continental Shelf	141
South County/Dos Cuadras (Oil Production)	Outer Continental Shelf	138

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-18

Sacramento Valley Air Basin
County Emission Trends and Forecasts

	NO$_x$ Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	31	35	33	36	31	27	23	19	15	13	41	43	42	41	34	28	25	22	21	21
Colusa	10	10	10	13	13	11	10	9	8	7	12	10	12	10	8	7	7	7	7	7
Glenn	14	13	12	13	12	10	9	8	7	6	15	15	14	12	12	10	10	9	9	9
Placer	23	27	28	31	29	28	24	19	16	14	35	32	34	30	28	23	20	19	18	18
Sacramento	130	135	142	149	126	105	85	66	51	40	212	195	173	145	114	86	67	59	55	53
Shasta	36	39	37	42	36	33	28	25	22	21	38	42	41	39	32	28	25	23	21	21
Solano	12	15	14	17	15	13	11	8	7	5	12	16	15	16	14	12	9	8	7	7
Sutter	20	21	19	22	20	18	16	14	12	10	20	19	20	18	15	13	12	12	11	12
Tehama	15	18	15	15	13	12	10	9	7	7	14	15	15	14	11	9	8	8	7	7
Yolo	32	33	34	38	34	32	24	19	14	11	36	33	28	23	20	16	13	12	11	11
Yuba	12	15	12	12	11	11	9	7	6	5	14	17	14	12	11	10	9	8	7	7
Air Basin Total	334	360	356	388	341	300	249	203	165	140	448	438	408	362	299	243	205	185	175	171

	Directly Emitted PM$_{10}$ Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	28	29	29	32	28	27	27	27	28	28	252	270	266	259	200	153	133	110	94	86
Colusa	15	16	16	16	16	16	17	17	17	18	53	48	46	43	34	27	23	21	19	18
Glenn	16	16	15	15	15	15	15	15	16	16	87	88	85	76	64	56	51	47	45	43
Placer	8	9	11	13	13	14	16	17	18	19	201	236	228	201	168	148	125	108	96	90
Sacramento	32	36	39	43	39	41	44	45	47	48	1456	1375	1297	1054	744	527	391	307	252	213
Shasta	29	27	27	30	30	30	34	35	37	38	319	327	327	331	268	230	215	196	185	180
Solano	9	9	9	9	9	9	9	9	9	9	69	105	103	103	72	56	42	35	29	26
Sutter	14	15	14	14	14	15	14	14	15	15	100	102	99	93	71	56	49	42	36	33
Tehama	13	15	15	14	14	14	15	15	16	16	83	91	85	87	65	50	42	36	32	30
Yolo	24	24	25	27	27	29	28	28	28	28	224	203	193	152	111	85	64	51	43	38
Yuba	9	8	8	8	8	8	8	8	8	9	89	96	81	76	63	51	45	39	34	32
Air Basin Total	197	203	209	221	212	219	226	232	238	243	2933	2942	2811	2475	1860	1439	1182	991	864	787

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19

Sacramento Valley Air Basin
County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Butte	12	13	12	14	11	11	11	11	11	11
Colusa	5	5	5	5	5	5	5	5	5	5
Glenn	7	7	6	6	6	7	7	7	7	7
Placer	4	4	5	7	6	7	7	7	8	8
Sacramento	13	14	16	17	15	15	16	16	17	17
Shasta	17	14	14	15	15	14	17	17	18	18
Solano	3	3	3	3	3	3	3	3	3	3
Sutter	5	5	5	5	5	5	5	5	5	5
Tehama	5	6	6	5	5	5	5	5	5	6
Yolo	8	7	8	8	8	9	8	8	8	8
Yuba	4	3	3	3	3	3	3	3	3	3
Air Basin Total	82	81	83	89	82	84	86	87	89	90

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins. A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Table A-19 (continued)

Sacramento Valley Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Lehigh Southwest Cement	Redding	576
Wheelabrator Shasta	Anderson	561
PG&E Delevan Compressor Station	Colusa	356
Wadham Energy Partnership	Williams	154
Calpine Greenleaf I	Yuba City	149
Sierra Pacific Ind. - Burney	Burney	144
Pacific Oroville Power	Oroville	124
Johns-Manville (Insulation)	Willows	123
Burney Forest Products	Burney	120
Burney Mountain Power	Burney	119

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Johns-Manville (Insulation)	Willows	162
Procter & Gamble	Sacramento	157
North Fork Aggregate	Cottonwood	133
Leer West, Inc. (Trailers)	Woodland	104
Oilseeds International	Grimes	103

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Johns-Manville (Insulation)	Willows	249
Lehigh Southwest Cement	Redding	141

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Johns-Manville (Insulation)	Willows	220
Lehigh Southwest Cement	Redding	103

Table A-20

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Salton Sea Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	43	38	37	41	44	37	34	32	30	28	46	46	37	38	37	32	31	30	29	29
Riverside	32	34	39	31	29	26	21	17	11	11	37	38	41	31	25	21	17	15	15	16
Air Basin Total	75	72	76	72	72	64	55	49	42	39	83	84	78	68	62	53	48	45	45	45

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	256	258	257	250	232	230	232	235	237	240	234	228	204	204	170	128	110	97	86	78
Riverside	18	20	21	35	33	32	25	26	27	29	275	274	296	223	169	120	83	66	57	54
Air Basin Total	274	278	278	285	265	262	257	261	264	268	509	502	500	427	338	248	193	163	144	133

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Imperial	61	62	60	60	57	56	56	56	57	57
Riverside	6	5	6	8	8	7	6	6	7	7
Air Basin Total	68	67	67	68	64	64	62	63	64	64

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

Table A-21

Salton Sea Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_X)		
Facility Name	**City**	**Tons per Year**
Imperial Irrigation District	El Centro	366
Holly Sugar	Brawley	210

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
U.S. Gypsum Plaster City	Plaster City	156

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-22

San Diego Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	280	273	287	319	270	231	189	157	131	125	439	437	413	343	267	226	186	173	168	170

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	68	76	84	102	97	105	112	119	125	133	3299	3030	2924	2458	1719	1279	938	742	610	539

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Diego	29	31	30	35	33	36	38	40	42	45

Table A-23

San Diego Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I	Carlsbad	224
Duke Energy-South Bay Power Plant	Chula Vista	121

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
National Steel & Shipbuilding	San Diego	196

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I	Carlsbad	169
Duke Energy-South Bay Power Plant	Chula Vista	136

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Cabrillo Power I	Carlsbad	169
Duke Energy-South Bay Power Plant	Chula Vista	136

Table A-24

San Francisco Bay Area Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	200	196	204	195	168	151	133	120	107	103	287	258	215	163	133	106	81	73	67	64
Contra Costa	263	245	200	182	156	130	95	82	72	68	242	246	189	127	111	97	67	58	55	53
Marin	29	30	29	28	24	20	18	14	11	8	53	49	42	32	27	22	18	14	12	11
Napa	15	14	16	15	14	13	11	9	7	5	25	22	20	17	15	16	11	9	8	8
San Francisco	98	107	97	96	79	71	59	50	40	36	144	123	99	72	59	48	37	33	29	28
San Mateo	98	97	95	92	84	70	61	52	44	41	158	141	114	83	70	52	40	35	32	30
Santa Clara	206	205	192	188	168	142	118	94	73	61	336	316	246	180	148	117	89	77	69	64
Solano	40	48	44	44	38	34	29	26	23	21	58	64	53	42	33	27	21	19	18	17
Sonoma	29	31	32	37	33	28	23	18	13	10	62	58	51	41	36	29	23	20	18	17
Air Basin Total	979	972	909	878	765	658	547	465	389	352	1366	1278	1029	756	631	513	387	337	307	292

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	37	35	41	41	40	46	45	48	50	53	1902	1725	1491	1097	778	572	440	363	295	255
Contra Costa	37	38	34	31	30	33	33	35	37	39	1280	1159	1044	787	591	430	346	281	232	203
Marin	6	6	7	8	8	9	10	10	11	11	392	367	311	235	171	129	105	81	65	55
Napa	7	6	8	7	8	9	9	9	10	11	150	140	128	110	93	74	62	51	42	37
San Francisco	13	14	15	14	15	19	17	17	18	19	867	813	685	482	346	261	205	170	143	125
San Mateo	14	15	17	18	17	22	21	22	23	24	1240	1131	905	645	477	327	257	207	167	144
Santa Clara	39	39	43	45	44	52	51	54	56	59	2302	2151	1786	1316	969	719	566	460	371	319
Solano	13	13	14	14	12	13	13	13	14	14	310	317	287	228	157	119	96	78	64	56
Sonoma	12	12	14	15	15	17	17	18	19	20	402	397	359	290	234	167	134	101	78	64
Air Basin Total	178	179	193	192	189	219	213	226	238	251	8846	8200	6997	5190	3814	2799	2213	1792	1456	1257

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.

Table A-25

San Francisco Bay Area Air Basin

County Emission Trends and Forecasts

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Alameda	17	16	18	18	17	19	18	19	20	21
Contra Costa	23	23	17	16	15	16	15	16	17	18
Marin	3	3	3	4	4	4	4	5	5	5
Napa	3	3	3	3	4	4	4	4	5	5
San Francisco	7	7	8	8	9	9	8	8	9	9
San Mateo	6	6	7	8	7	9	8	9	9	9
Santa Clara	16	16	17	18	18	20	19	20	21	21
Solano	6	6	6	6	5	5	5	5	5	5
Sonoma	5	6	6	7	8	8	8	8	9	9
Air Basin Total	87	85	87	88	86	93	91	94	99	103

A portion of Solano County lies within the Sacramento Valley Air Basin. A portion of Sonoma County lies within the North Coast Air Basin.
Table A-25 (continued)

San Francisco Bay Area Air Basin

High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Valero Refining Company	Benicia	2064
Shell Martinez Refinery	Martinez	1733
Tesoro Refining And Marketing	Martinez	1493
Hanson Permanente Cement	Cupertino	1074
ConocoPhillips - San Francisco	Rodeo	927
Chevron Products Company	Richmond	892
Tosco Refining Company	Rodeo	682
Owens-Brockway Glass Container	Oakland	518
Mirant Potrero	San Francisco	271
Mirant Delta	Pittsburg	211

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Chevron Products Company	Richmond	1482
Tesoro Refining And Marketing	Martinez	1422
Shell Martinez Refinery	Martinez	1158
New United Motor Manufacturing	Fremont	526
Valero Refining Company	Benicia	384
ConocoPhillips - San Francisco	Rodeo	325
Ball Metal Beverage Container	Fairfield	194
Pechiney Plastic Packaging	San Leandro	124

Table A-26

San Francisco Bay Area Air Basin

High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Shell Martinez Refinery	Martinez	308
Chevron Products Company	Richmond	214
Valero Refining Company	Benicia	206
Tesoro Refining And Marketing	Martinez	145

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Shell Martinez Refinery	Martinez	297
Chevron Products Company	Richmond	206
Valero Refining Company	Benicia	191
Tesoro Refining And Marketing	Martinez	131

Table A-26 (continued)

San Joaquin Valley Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	128	144	152	169	148	115	94	76	60	50	181	166	140	128	111	94	81	76	74	74
Kern	210	310	294	260	196	153	124	107	95	88	598	718	601	200	116	104	87	82	78	77
Kings	37	32	33	37	33	25	17	14	12	10	31	28	25	22	23	19	18	18	18	19
Madera	30	36	33	36	33	31	30	27	24	22	43	26	24	24	22	20	19	18	17	17
Merced	41	48	43	50	45	40	33	26	21	17	53	50	41	45	38	35	31	30	29	30
San Joaquin	93	98	106	113	102	90	76	63	53	48	105	95	86	81	69	58	46	41	40	40
Stanislaus	51	64	63	77	66	57	48	39	31	26	76	71	66	71	61	54	46	43	42	43
Tulare	67	77	75	78	73	67	60	50	41	35	112	107	102	100	95	89	85	82	82	83
Air Basin Total	658	810	800	820	695	579	481	402	337	297	1199	1261	1086	671	536	473	413	389	380	382

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	77	72	73	81	80	80	75	71	71	73	891	842	810	737	576	449	346	281	237	212
Kern	54	53	51	50	49	50	47	45	47	49	723	827	714	607	447	342	264	219	188	170
Kings	24	23	23	27	27	28	25	24	24	25	151	139	120	111	100	76	63	51	43	38
Madera	19	21	18	21	21	20	19	18	19	20	188	198	193	173	134	119	110	95	83	75
Merced	33	33	33	38	37	37	34	31	31	32	351	344	302	310	241	197	167	141	122	110
San Joaquin	28	28	29	35	35	36	32	31	32	33	608	597	607	530	414	318	238	191	161	145
Stanislaus	30	31	31	37	36	36	33	30	30	31	408	403	394	412	314	243	185	149	124	111
Tulare	90	91	92	96	96	98	96	94	95	96	967	961	948	894	826	766	731	690	662	645
Air Basin Total	355	352	352	385	380	385	361	345	350	359	4287	4310	4089	3774	3053	2510	2105	1817	1620	1505

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27

San Joaquin Valley Air Basin
County Emission Trends and Forecasts

Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)										
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Fresno	36	29	29	30	28	28	26	25	24	25
Kern	31	29	25	21	20	20	19	18	18	19
Kings	9	8	7	8	8	8	7	7	7	7
Madera	9	10	8	9	8	8	8	8	8	8
Merced	13	14	13	15	14	14	13	12	12	13
San Joaquin	13	12	12	14	14	14	12	12	11	12
Stanislaus	14	15	15	16	16	15	14	13	13	13
Tulare	66	66	66	67	66	67	67	66	66	66
Air Basin Total	192	183	176	180	175	175	167	161	161	162

A portion of Kern County lies within the Mojave Desert Air Basin.

Table A-27 (continued)

San Joaquin Valley Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
Aera Energy	Kern County	1069
Pilkington North America (Glass)	Lathrop	1017
Guardian Industries (Glass)	Kingsburg	760
Owens-Brockway Glass Container	Tracy	543
Sycamore Cogeneration	Kern County	465
Kern River Cogeneration	Kern County	458
Saint-Gobain Containers	Madera	451
Chevron USA	Kern County	440
Occidental Of Elk Hills (Natural Gas)	Tupman	414
Covanta Stanislaus (Cogeneration)	Crows Landing	340

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Crimson Resource Management (Natural Gas)	Taft	445
Occidental Of Elk Hills (Natural Gas)	Tupman	262
Silgan Containers	Riverbank	223
J. G. Boswell Company Oil Mill	Corcoran	196
Pactiv Corporation (Packaging)	Bakersfield	188
Tricor Refining	Oildale	148
AES Delano (Electric Power)	Delano	107
Greif Bros. Corp. (Containers)	Merced	103

Table A-28

San Joaquin Valley Air Basin

High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Aera Energy	Kern County	130
Pilkington North America (Glass)	Lathrop	115
Chevron USA	Kern County	100

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
Aera Energy	Kern County	130
Chevron USA	Kern County	100

Table A-28 (continued)

South Central Coast Air Basin
County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	64	63	48	49	33	32	23	19	14	12	45	49	52	43	34	30	26	24	23	23
Santa Barbara	53	66	66	67	56	50	41	34	28	25	82	77	80	76	57	47	41	37	35	34
Ventura	95	106	94	86	68	59	48	39	31	27	105	113	103	89	72	61	48	43	40	39
Air Basin Total	212	235	208	203	157	140	112	92	74	64	232	239	236	208	163	137	116	104	98	96

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	24	26	26	27	27	28	29	29	30	31	273	290	302	277	204	173	137	114	98	89
Santa Barbara	18	20	21	22	21	22	22	23	23	24	468	451	458	418	300	229	181	144	118	102
Ventura	28	25	25	28	27	29	29	30	31	32	567	627	621	559	424	325	248	205	176	159
Air Basin Total	69	70	72	77	75	79	80	82	84	87	1308	1368	1381	1254	928	728	567	463	393	351

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
San Luis Obispo	11	12	11	11	10	11	11	11	11	11
Santa Barbara	9	10	10	10	10	10	10	10	10	10
Ventura	17	15	14	14	13	13	13	14	14	14
Air Basin Total	38	37	34	36	33	34	34	34	34	35

Table A-29

South Central Coast Air Basin
High Emitting Facilities

Oxides of Nitrogen (NO_x)		
Facility Name	**City**	**Tons per Year**
BreitBurn Energy - Orcutt Hill (Oil Production)	Orcutt Hill Field	219
ConocoPhillips Santa Maria	Arroyo Grande	168
Procter & Gamble Paper Products	Oxnard	133
Celite Corporation (Minerals)	Lompoc	101

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
Aera Energy	Ventura	151
Venoco - Ellwood (Oil Production)	Goleta	100

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
Celite Corporation (Minerals)	Lompoc	122

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**

No High Emitting Facilities

Table A-30

South Coast Air Basin

County Emission Trends and Forecasts

	NO_x Emissions (tons/day, annual average)										ROG Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	1229	1092	1136	1004	840	732	582	465	368	319	1898	1538	1488	1133	829	648	406	332	299	281
Orange	267	271	304	256	216	189	154	119	90	74	462	441	452	345	260	210	135	114	104	98
Riverside	88	99	111	151	134	137	117	91	67	53	123	122	130	134	111	95	69	59	57	57
San Bernardino	128	137	143	142	125	125	104	80	61	51	159	170	175	147	119	102	73	61	57	56
Air Basin Total	1712	1600	1694	1553	1315	1183	957	756	586	496	2642	2270	2245	1761	1320	1058	684	565	515	490

	Directly Emitted PM_{10} Emissions (tons/day, annual average)										CO Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	140	136	149	187	173	162	136	135	137	139	11674	9006	8785	6599	4705	3359	2294	1722	1374	1150
Orange	31	38	44	59	58	62	53	54	54	54	2621	2406	2461	1922	1451	1042	761	601	502	443
Riverside	21	27	29	50	49	53	46	48	51	55	773	788	845	925	718	545	405	318	264	232
San Bernardino	36	38	38	51	49	48	41	41	42	44	1068	1168	1007	862	672	506	378	302	255	231
Air Basin Total	228	239	261	347	330	325	276	278	284	292	16137	13368	13099	10309	7547	5451	3838	2943	2395	2056

	Directly Emitted $PM_{2.5}$ Emissions (tons/day, annual average)									
County	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Los Angeles	78	66	67	73	61	57	51	51	51	52
Orange	15	16	17	20	18	19	17	17	17	17
Riverside	8	10	10	15	14	16	14	14	15	16
San Bernardino	18	17	14	17	15	16	14	14	15	15
Air Basin Total	119	110	108	125	108	107	97	97	98	100

A portion of Los Angeles County lies within the Mojave Desert Air Basin. Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins. A portion of San Bernardino County Lies within the Mojave Desert Air Basin.

Table A-31

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South Coast Air Basin

High Emitting Facilities

Oxides of Nitrogen (NOx)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	1036
California Portland Cement	Colton	946
ExxonMobil Oil Corporation	Torrance	748
ConocoPhillips Company	Wilmington	720
BP West Coast Products Carson Refinery	Carson	667
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	615
ConocoPhillips Company	Carson	407
BP Wilmington Calciner	Wilmington	301
Ultramar Inc (Refining)	Wilmington	285

Reactive Organic Gases (ROG)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	1011
ExxonMobil Oil Corporation	Torrance	677
BP West Coast Products Carson Refinery	Carson	526
Lasco Bathware Inc. (Plumbing Fixtures)	Anaheim	277
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	244
TABC, Inc (Automotive Parts)	Long Beach	226
ConocoPhillips Company	Wilmington	198
Dart Container Corp Of California	Corona	197
Yosemite Auto Body Shop Corp	Los Angeles	182
Anheuser-Busch Inc.	Van Nuys	164

South Coast Air Basin

High Emitting Facilities

Directly Emitted Particulate Matter (PM_{10})		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	350
BP West Coast Products Carson Refinery	Carson	203
ExxonMobil Oil Corporation	Torrance	178
ConocoPhillips Company	Wilmington	128
Equilon Enterprises, Shell Oil Prod. U S	Wilmington	113

Directly Emitted Particulate Matter ($PM_{2.5}$)		
Facility Name	**City**	**Tons per Year**
ChevronTexaco Products	El Segundo	298
BP West Coast Products Carson Refinery	Carson	176
ExxonMobil Oil Corporation	Torrance	169
ConocoPhillips Company	Wilmington	121

Table A-32 (continued)

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Air Quality

This section contains air quality trend data for each county in California's 15 air basins, organized alphabetically, by air basin. It is important to note that some counties are located in more than one air basin. For these counties, the air quality data are for that portion of the county located in each air basin. The time period covered is 1985 through 2004 for ozone, CO, NO_2, and SO_2; 1988 through 2004 for PM_{10}; and 1999 through 2004 for $PM_{2.5}$. In some areas, no monitoring data are available or the data are incomplete. Tables for these areas are included, but the lack of data is noted on the tables.

Consistent with last years almanac, this section provides information on the 4th highest 1-hour ozone concentration in three years, and the average 4th highest 8-hour concentration in three years. In some cases, these statistics may be the same as the national 1-hour and 8-hour ozone design values. However, since this does not consider data completeness, they are not considered valid for design value purposes.

This year's almanac also provides both State and national PM_{10} annual average statistics. State and national annual average concentrations may differ for several reasons: 1) the State and national criteria for assessing data completeness are different, 2) different monitors are approved, by the State and U.S. EPA, for assessing compliance with the State and national standards, and 3) the State standard uses local conditions while the national standard uses standard conditions for data reporting.

Additional information about the data in the folowing tables can be found in the *Introduction* section to this Appendix and in the *Interpreting the Emissions and Air Quality Statistics* section in Chapter 1.

Great Basin Valleys Air Basin

County: Alpine

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-33

Great Basin Valleys Air Basin

County: Inyo

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator								0.083	0.083	0.097	0.097	0.094	0.090	0.092	0.090	0.090	0.089	0.091	0.091	0.090
Peak 8-Hour Indicator								0.073	0.075	0.086	0.086	0.084	0.085	0.087	0.085	0.085	0.083	0.085	0.084	0.083
4th High 1-Hr. in 3 Yrs							0.040	0.080	0.080	0.093	0.093	0.093	0.086	0.088	0.089	0.090	0.092	0.092	0.092	0.088
Avg. of 4th High 8-Hr. in 3 Yrs							0.040	0.055	0.060	0.068	0.064	0.076	0.074	0.079	0.079	0.080	0.079	0.081	0.081	0.080
Maximum 1-Hr. Concentration							0.050	0.080	0.080	0.101	0.085	0.095	0.084	0.092	0.094	0.090	0.095	0.100	0.089	0.086
Max. 8-Hr. Concentration							0.041	0.076	0.077	0.089	0.073	0.082	0.080	0.085	0.089	0.080	0.089	0.088	0.084	0.081
Days Above State Standard							0	0	0	2	0	1	0	0	0	0	1	2	0	0
Days Above Nat. 1-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.							0	0	0	3	0	0	0	1	1	0	2	2	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				119	227	866	150	64	254	388	692	309	402	1022	2708	9967	3457	7401	15641	4797
Max. 24-Hr. Concentration (Nat)				394	1861	866	181	526	781	388	2668	491	402	1116	867	2023	3189	1442	16462	4913
Annual Average (State)					27.1	29.4	23.2	18.1	28.7	22.4	32.3	21.5	14.6	57.8	13.6	115.4	63.1	159.3	130.4	68.3
Annual Average (Nat)				32.7	27.4	29.4	23.2	37.3	30.6	26.2	31.8	21.5	14.6	53.8	15.3	39.0	69.6	31.2	38.8	25.4
Calc Days Above State 24-Hr Std					36	18	12	12	36	16	23	7	6	80	0	58	41	93	44	35
Calc Days Above Nat 24-Hr Std				13	27	12	3	19	8	4	14	26	17	22	0	45	17	13	32	20

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															40.7	68	76	68	44	81
Max. 24-Hr. Concentration (Nat)															40.7	68	76	68	44	81
98th Percentile of 24-Hr Conc.																67	23	64	8	
Annual Average (State)																	5.5			
Avg. of Qtrly. Means (Nat)																	5.5	8.4		

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator								3.5	3.2	3.1	2.9									
Max. 1-Hr. Concentration							6.0	11.0	5.0	5.0	4.0									
Max. 8-Hr. Concentration							3.6	3.8	2.8	2.8	2.0									
Days Above State 8-Hr. Std.							0	0	0	0	0									
Days Above Nat. 8-Hr. Std.							0	0	0	0	0									

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-34

Great Basin Valleys Air Basin

County: Mono

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.094	0.100	0.099	0.100	0.099	0.100	0.099	0.115	0.110	0.108	0.097	0.099	0.096	0.095			0.104	0.105		
Peak 8-Hour Indicator	0.088	0.095	0.094	0.092	0.092	0.093	0.091	0.097	0.093	0.092	0.085	0.087	0.083	0.081			0.091	0.091		
4th High 1-Hr. in 3 Yrs	0.090	0.100	0.100	0.100	0.100	0.100	0.090	0.120	0.120	0.120	0.100	0.100	0.091	0.090			0.097	0.097		
Avg. of 4th High 8-Hr. in 3 Yrs	0.079	0.082	0.084	0.086	0.081	0.081	0.076	0.081	0.078	0.082	0.079	0.079	0.077	0.073			0.083	0.072		
Maximum 1-Hr. Concentration	0.100	0.100	0.100	0.100	0.080	0.100	0.090	0.150	0.090	0.120	0.110	0.090	0.092	0.079			0.100	0.071		
Max. 8-Hr. Concentration	0.090	0.093	0.091	0.098	0.077	0.091	0.073	0.103	0.077	0.092	0.101	0.090	0.078	0.073			0.095	0.063		
Days Above State Standard	1	5	4	3	0	2	0	5	0	2	2	0	0	0			4	0		
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	3	0	0	0	0	0	0			0	0		
Days Above Nat. 8-Hr. Std.	2	13	2	6	0	3	0	9	0	3	2	1	0	0			2	0		

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				166	163	161	134	493	981	92	122	158	112	88	109	8817	3643	5291	4774	803
Max. 24-Hr. Concentration (Nat)				166	163	161	134	493	981	92	122	158	112	106	133	10466	4482	6505	5745	987
Annual Average (State)						11.6		37.0	34.2	29.8	26.0		26.4		10.0	116.8		62.3	10.5	19.6
Annual Average (Nat)				36.9	34.6	39.6	12.7	36.3	34.6	29.9	26.0	14.4	26.5	8.7	12.6	121.2	17.7	79.5	12.7	24.1
Calc Days Above State 24-Hr Std						13		83	62	64	37		36		0	18		22	0	11
Calc Days Above Nat 24-Hr Std				6	7	12	0	6	6	0	0	0	0	0	0	15	0	13	22	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																31.0	41.0		34.0	27.0
Max. 24-Hr. Concentration (Nat)																31.0	41.0		34.0	27.0
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	7.3	7.2	7.0	5.9	5.8	5.7	5.6		5.0	4.7	4.6	4.0	4.0	3.9		2.9	2.5	2.5		
Max. 1-Hr. Concentration	16.0	11.0	9.0	13.0	12.0	10.0	11.0	8.0	13.0	9.0	10.0	6.0	8.2	6.7		4.2	15.4	3.8		
Max. 8-Hr. Concentration	7.4	6.0	6.3	5.0	5.4	4.4	5.0	4.4	4.5	5.4	5.4	3.0	3.4	3.0		2.5	2.5	1.8		
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0		
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0		

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-35

Lake County Air Basin

County: Lake

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.075	0.081	0.081	0.080	0.083	0.074	0.075	0.077	0.077	0.083	0.082	0.082	0.076	0.076	0.087	0.083	0.080	0.081	0.080	0.081
Peak 8-Hour Indicator	0.067	0.072	0.075	0.076	0.072	0.060	0.064	0.064	0.066	0.071	0.071	0.071	0.064	0.065	0.075	0.073	0.071	0.073	0.071	0.071
4th High 1-Hr. in 3 Yrs	0.070	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
Avg. of 4th High 8-Hr. in 3 Yrs	0.059	0.064	0.065	0.065	0.058	0.054	0.055	0.055	0.057	0.059	0.061	0.060	0.058	0.057	0.061	0.062	0.063	0.064	0.064	0.065
Maximum 1-Hr. Concentration	0.080	0.080	0.090	0.070	0.060	0.090	0.080	0.080	0.080	0.090	0.070	0.090	0.080	0.080	0.090	0.080	0.070	0.090	0.080	0.080
Max. 8-Hr. Concentration	0.070	0.080	0.080	0.061	0.053	0.063	0.066	0.057	0.072	0.075	0.063	0.070	0.065	0.076	0.072	0.073	0.065	0.077	0.065	0.066
Days Above State Standard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				23	29	30	31	22	30	21	30	26	18	34	40	21	23	85	32	22
Max. 24-Hr. Concentration (Nat)				28	29	30	31	22	30	21	30	26	18	35	43	22	21			
Annual Average (State)					12.9			11.9	11.3	11.0	10.8	10.2	8.6			10.6	10.2	13.1	10.0	10.0
Annual Average (Nat)					12.9		12.6	11.8	11.3	10.9	10.7	10.2	8.6	7.8		10.8				
Calc Days Above State 24-Hr Std					0			0	0	0	0	0	0			0	0	12	0	0
Calc Days Above Nat 24-Hr Std					0	0	0	0	0	0	0	0	0	0		0				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															14.5	10.0	15.1	74.7	21.9	18.1
Max. 24-Hr. Concentration (Nat)															14.5	10.0	15.1	74.7	21.9	18.1
98th Percentile of 24-Hr Conc.																9.4	11.3	46.3	15.1	9.0
Annual Average (State)																	4.1	6.3	4.4	4.4
Avg. of Qtrly. Means (Nat)																4.3	4.2	6.3	4.4	4.4

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator					1.9	2.9	2.9													
Max. 1-Hr. Concentration					3.0	6.0	7.0													
Max. 8-Hr. Concentration					2.2	2.6	3.1													
Days Above State 8-Hr. Std.					0	0	0													
Days Above Nat. 8-Hr. Std.					0	0	0													

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-36

Lake Tahoe Air Basin

County: El Dorado

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.081	0.082	0.085	0.089	0.091	0.091	0.093	0.089	0.079	0.082	0.084	0.084	0.083	0.082	0.081	0.089	0.090	0.093	0.091	0.089
Peak 8-Hour Indicator	0.072	0.074	0.078	0.080	0.081	0.081	0.082	0.081	0.068	0.074	0.075	0.076	0.073	0.075	0.074	0.078	0.079	0.080	0.081	0.079
4th High 1-Hr. in 3 Yrs	0.080	0.080	0.090	0.090	0.090	0.090	0.090	0.090	0.070	0.081	0.086	0.083	0.083	0.081	0.081	0.086	0.087	0.089	0.088	0.088
Avg. of 4th High 8-Hr. in 3 Yrs	0.068	0.069	0.071	0.074	0.076	0.075	0.076	0.075	0.056	0.061	0.070	0.071	0.068	0.069	0.069	0.074	0.075	0.075	0.076	0.075
Maximum 1-Hr. Concentration	0.100	0.090	0.090	0.090	0.100	0.090	0.090	0.100	0.090	0.086	0.092	0.083	0.095	0.081	0.095	0.089	0.095	0.102	0.082	0.096
Max. 8-Hr. Concentration	0.086	0.080	0.082	0.085	0.085	0.080	0.081	0.082	0.071	0.079	0.089	0.073	0.071	0.077	0.079	0.077	0.084	0.079	0.079	0.082
Days Above State Standard	1	0	0	0	2	0	0	1	0	0	0	0	1	0	1	0	1	1	0	1
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)								52	92	78	71	72	55	50	36	44	50	46	52	112
Max. 24-Hr. Concentration (Nat)				95	73	84	78	85	92	78	71	72	55	59	41	50	58	51	61	130
Annual Average (State)										27.1	22.5		21.6	19.8	16.9	17.3	16.9	17.1	15.0	37.5
Annual Average (Nat)					28.1	30.7	28.3			27.1	22.5	23.4	21.6	23.4	19.9	20.4	19.8	19.9	17.6	44.2
Calc Days Above State 24-Hr Std										42	18		13	0	0	0	0	0	6	99
Calc Days Above Nat 24-Hr Std					0	0	0			0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															21.0	23.0	31.0	27.0	24.0	23.2
Max. 24-Hr. Concentration (Nat)															21.0	23.0	31.0	27.0	21.0	20.0
98th Percentile of 24-Hr Conc.															21.0	22.0	26.0		19.0	
Annual Average (State)															8.3	7.8	8.2		7.2	
Avg. of Qtrly. Means (Nat)															8.3	7.8	8.2		7.2	

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	16.4	15.5	14.9	13.2	12.6	11.9	11.1	10.2	8.7	8.3	7.8	7.0	5.6	5.0	2.3	2.1	2.0	2.0	1.9	1.9
Max. 1-Hr. Concentration	23.0	20.0	19.0	19.0	17.0	18.0	14.0	15.0	13.0	11.3	9.3	10.4	7.7	7.5	3.2	5.4	3.1	3.8	2.4	6.1
Max. 8-Hr. Concentration	16.3	12.5	13.0	12.5	11.3	10.1	9.2	9.9	7.5	7.1	6.3	5.1	3.8	4.3	2.4	1.9	1.9	3.0	1.9	4.4
Days Above Nat. 8-Hr. Std.	28	10	12	9	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Lake Tahoe 8-Hr. Std.	121	96	87	80	67	39	24	13	12	9	1	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.079	0.074	0.076	0.073	0.074	0.078	0.076	0.078	0.062	0.061	0.062	0.062	0.061	0.060	0.057	0.058	0.068	0.063	0.062	0.062
Max. 1-Hr. Concentration	0.080	0.080	0.080	0.070	0.070	0.150	0.060	0.060	0.060	0.057	0.059	0.061	0.051	0.052	0.060	0.086	0.090	0.088	0.059	0.068
Max. Annual Average	0.011	0.010	0.012	0.012		0.012	0.012		0.011	0.012	0.011	0.011	0.011	0.010	0.011	0.011	0.011	0.012	0.010	

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-37

A portion of El Dorado County lies within the Mountain Counties Air Basin.

Lake Tahoe Air Basin

County: Placer

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																			0.079	0.079
Peak 8-Hour Indicator																			0.073	0.073
4th High 1-Hr. in 3 Yrs																			0.076	0.076
Avg. of 4th High 8-Hr. in 3 Yrs																			0.068	0.061
Maximum 1-Hr. Concentration																			0.086	0.065
Max. 8-Hr. Concentration																			0.070	0.061
Days Above State Standard																			0	0
Days Above Nat. 1-Hr. Std.																			0	0
Days Above Nat. 8-Hr. Std.																			0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)											24	50								
Max. 24-Hr. Concentration (Nat)											24	50								
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																			27.4	8.0
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator									3.9	3.9	3.9								1.0	1.0
Max. 1-Hr. Concentration									9.0	11.6	9.5								1.4	0.9
Max. 8-Hr. Concentration									4.3	4.7	2.9								0.8	0.5
Days Above Nat. 8-Hr. Std.									0	0	0								0	0
Days Above Lake Tahoe 8-Hr. Std.									0	0	0								0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				0.026
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-38

Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

County: Kern

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator										0.122	0.134	0.125	0.121	0.125	0.121	0.121	0.116	0.116	0.117	0.115
Peak 8-Hour Indicator										0.106	0.112	0.107	0.105	0.110	0.106	0.106	0.101	0.100	0.103	0.103
4th High 1-Hr. in 3 Yrs									0.120	0.121	0.123	0.123	0.123	0.126	0.119	0.119	0.118	0.116	0.118	0.113
Avg. of 4th High 8-Hr. in 3 Yrs									0.102	0.102	0.101	0.100	0.097	0.099	0.096	0.097	0.096	0.095	0.098	0.092
Maximum 1-Hr. Concentration									0.130	0.124	0.142	0.130	0.119	0.134	0.119	0.113	0.126	0.115	0.119	0.121
Max. 8-Hr. Concentration									0.112	0.107	0.109	0.109	0.096	0.117	0.100	0.095	0.104	0.102	0.103	0.090
Days Above State Standard									15	43	54	46	22	43	39	25	33	18	31	8
Days Above Nat. 1-Hr. Std.									2	0	3	2	0	2	0	0	1	0	0	0
Days Above Nat. 8-Hr. Std.									13	46	46	42	19	40	34	15	32	26	27	3

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)					54	462	534	65	50	33	143	92	130	159	40	90	112	194	158	67
Max. 24-Hr. Concentration (Nat)				148	54	462	534	65	64	116	235	92	130	165	45	90	115	208	162	68
Annual Average (State)												16.9	18.4	15.0	17.7	20.3	19.8	24.2	21.5	18.3
Annual Average (Nat)						34.0			21.2		17.3	16.9	18.6	16.2	19.3	21.6	21.2	26.1	22.9	33.1
Calc Days Above State 24-Hr Std												0	6	0	0	6	6	12	12	0
Calc Days Above Nat 24-Hr Std						6			0		0	0	0	0	0	0	0	7	6	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															27.6	38.6	15.3	31.4	23.2	17.8
Max. 24-Hr. Concentration (Nat)															27.6	38.6	15.3	31.4	23.2	17.8
98th Percentile of 24-Hr Conc.																	13.9	28.0		
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																7.8	6.1	8.2	5.9	6.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator										0.063	0.067	0.072	0.072	0.072	0.067	0.070	0.066	0.067	0.064	0.062
Max. 1-Hr. Concentration									0.070	0.060	0.120	0.075	0.075	0.082	0.083	0.071	0.071	0.071	0.073	0.064
Max. Annual Average											0.008		0.010	0.011		0.010	0.010		0.009	

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-39

A portion of Kern County lies within the San Joaquin Valley Air Basin.

Mojave Desert Air Basin

County: Los Angeles

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.185	0.187	0.191	0.187	0.181	0.179	0.140	0.154	0.159	0.161	0.194	0.138	0.134	0.140	0.131	0.137	0.128	0.140	0.137	0.134
Peak 8-Hour Indicator	0.143	0.145	0.144	0.138	0.138	0.136	0.113	0.120	0.122	0.123	0.144	0.110	0.111	0.107	0.104	0.107	0.106	0.108	0.115	0.111
4th High 1-Hr. in 3 Yrs	0.180	0.190	0.190	0.180	0.170	0.170	0.140	0.160	0.160	0.160	0.172	0.138	0.129	0.137	0.137	0.139	0.128	0.128	0.133	0.133
Avg. of 4th High 8-Hr. in 3 Yrs	0.132	0.134	0.132	0.128	0.123	0.105	0.105	0.110	0.113	0.113	0.130	0.103	0.098	0.097	0.089	0.092	0.091	0.071	0.082	0.100
Maximum 1-Hr. Concentration	0.190	0.200	0.170	0.180	0.210	0.150	0.140	0.170	0.160	0.143	0.185	0.131	0.123	0.164	0.097	0.141	0.146	0.157	0.156	0.121
Max. 8-Hr. Concentration	0.147	0.150	0.140	0.131	0.147	0.106	0.111	0.137	0.127	0.112	0.154	0.104	0.101	0.118	0.083	0.117	0.102	0.107	0.120	0.101
Days Above State Standard	106	108	105	105	95	52	62	78	59	62	92	40	14	24	1	35	37	46	50	37
Days Above Nat. 1-Hr. Std.	58	47	32	44	27	7	8	25	14	10	34	1	0	8	0	2	3	5	4	0
Days Above Nat. 8-Hr. Std.	85	79	76	91	65	36	39	53	36	33	70	18	7	18	0	28	24	38	33	24

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)						342	780	68	70	97	61	67	54						54	33
Max. 24-Hr. Concentration (Nat)					110	342	780	68	70	97	61	67	54	80	85			73	57	56
Annual Average (State)									35.1			29.0							23.2	
Annual Average (Nat)					46.0		58.0	32.6	34.9		25.5	29.0	29.2		28.7			29.7	24.6	22.6
Calc Days Above State 24-Hr Std									58			12							6	
Calc Days Above Nat 24-Hr Std					0		13	0	0		0	0	0		0			0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															47.6	36.0	35.0	24.0	25.0	18.0
Max. 24-Hr. Concentration (Nat)															47.6	36.0	35.0	24.0	25.0	18.0
98th Percentile of 24-Hr Conc.															23.5	21.0		20.0	17.0	15.0
Annual Average (State)															11.2				9.4	
Avg. of Qtrly. Means (Nat)															11.2	10.5		10.4	9.4	8.5

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.6	5.2	4.9	4.6	5.5	7.7	7.6	6.5	6.2	6.1	5.8	5.3	4.8	4.4	4.4	4.6	4.8	2.0	2.0	2.0
Max. 1-Hr. Concentration	12.0	9.0	12.0	11.0	13.0	11.0	10.0	9.0	8.0	9.1	7.5	6.8	5.9	5.4	7.2	6.0	6.1	3.4	3.2	2.9
Max. 8-Hr. Concentration	5.7	4.6	3.9	5.9	7.1	8.3	7.1	5.4	5.9	5.6	5.1	4.7	4.0	3.6	5.4	4.3	3.3	2.2	1.9	1.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.091	0.087	0.084	0.090	0.091	0.096	0.095	0.097	0.098	0.097	0.098	0.090	0.086	0.070	0.070	0.070	0.070	0.074	0.071	0.072
Max. 1-Hr. Concentration	0.080	0.090	0.090	0.090	0.080	0.090	0.110	0.160	0.110	0.097	0.140	0.080	0.071	0.077	0.083	0.065	0.075	0.101	0.067	0.103
Max. Annual Average	0.015	0.014	0.016	0.016	0.019		0.014	0.017	0.020	0.018	0.019	0.015				0.016		0.016	0.015	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-40

A portion of Los Angeles County lies within the South Coast Air Basin.

Mojave Desert Air Basin

County: Riverside

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.143	0.138	0.144	0.142	0.141	0.132	0.140	0.146	0.146										0.079	0.076
Peak 8-Hour Indicator	0.106	0.107	0.112	0.113	0.116	0.105	0.113	0.113	0.114										0.073	0.069
4th High 1-Hr. in 3 Yrs	0.110	0.140	0.147	0.147	0.140	0.131	0.130	0.130	0.131										0.074	0.075
Avg. of 4th High 8-Hr. in 3 Yrs	0.092	0.096	0.101	0.103	0.102	0.096	0.099	0.101	0.101										0.064	0.062
Maximum 1-Hr. Concentration	0.140	0.160	0.148	0.140	0.140	0.130	0.130	0.138	0.140										0.077	0.078
Max. 8-Hr. Concentration	0.102	0.105	0.127	0.105	0.117	0.102	0.115	0.115	0.108										0.071	0.067
Days Above State Standard	19	39	65	32	31	23	33	44	18										0	0
Days Above Nat. 1-Hr. Std.	3	3	10	4	2	1	6	7	1										0	0
Days Above Nat. 8-Hr. Std.	8	30	49	16	20	18	37	39	16										0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)							112	242												
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-41

Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

Mojave Desert Air Basin

County: San Bernardino

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.200	0.235	0.231	0.234	0.204	0.215	0.223	0.220	0.193	0.191	0.193	0.186	0.171	0.176	0.162	0.154	0.136	0.139	0.138	0.139
Peak 8-Hour Indicator	0.164	0.200	0.191	0.189	0.161	0.170	0.170	0.166	0.155	0.148	0.158	0.147	0.145	0.145	0.133	0.124	0.114	0.116	0.118	0.117
4th High 1-Hr. in 3 Yrs	0.220	0.230	0.230	0.230	0.210	0.220	0.230	0.230	0.200	0.190	0.188	0.182	0.175	0.167	0.166	0.164	0.135	0.143	0.138	0.138
Avg. of 4th High 8-Hr. in 3 Yrs	0.150	0.168	0.163	0.165	0.153	0.151	0.151	0.147	0.139	0.138	0.137	0.131	0.124	0.127	0.118	0.110	0.102	0.106	0.106	0.107
Maximum 1-Hr. Concentration	0.210	0.260	0.220	0.270	0.220	0.270	0.240	0.230	0.200	0.188	0.240	0.175	0.187	0.202	0.137	0.163	0.146	0.148	0.163	0.138
Max. 8-Hr. Concentration	0.167	0.225	0.161	0.167	0.161	0.198	0.173	0.165	0.147	0.155	0.170	0.146	0.133	0.144	0.122	0.132	0.117	0.123	0.130	0.119
Days Above State Standard	138	142	147	148	150	135	132	148	129	137	109	98	95	74	74	79	52	68	78	63
Days Above Nat. 1-Hr. Std.	74	94	71	104	91	76	67	75	66	77	47	38	22	24	4	10	3	14	11	4
Days Above Nat. 8-Hr. Std.	119	136	135	137	136	118	122	128	121	126	94	83	74	60	61	61	47	59	61	41

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				63	191	381	389	80	79	140	85	138	85						169	83
Max. 24-Hr. Concentration (Nat)				150	191	381	389	105	79	140	85	138	85	70	109	80	84	98	181	88
Annual Average (State)					42.5			39.7	34.4	27.9		28.9	27.4						27.9	
Annual Average (Nat)				35.8	48.6	48.1	42.8	39.4	34.9	42.1		28.9	27.3	27.8	32.1	33.6	29.8	34.3	33.2	28.4
Calc Days Above State 24-Hr Std					72			84	50	6		18	6						18	
Calc Days Above Nat 24-Hr Std				0	6	6	7	0	0	0		0	0	0	0	0	0	0	8	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															25.4	31.0	32.0	38.0	28.0	34.0
Max. 24-Hr. Concentration (Nat)															25.4	31.0	32.0	38.0	28.0	34.0
98th Percentile of 24-Hr Conc.															20.4	23.0	21.0	34.0	23.0	20.0
Annual Average (State)																	11.5	13.9		10.8
Avg. of Qtrly. Means (Nat)															11.9	12.0	11.5	13.9	11.4	10.8

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	3.4	3.4	3.5	4.2	4.1	4.1	4.2	4.3	3.8	3.8	2.9	7.4	2.3	2.4	2.1	1.7	1.8	1.8	1.8	1.8
Max. 1-Hr. Concentration	6.0	8.0	6.0	10.0	7.0	9.0	5.0	6.0	5.0	7.9	6.1	8.4	4.1	3.9	10.3	3.0	3.8	3.0	3.9	2.4
Max. 8-Hr. Concentration	3.5	3.4	4.0	5.8	3.9	3.9	3.9	3.4	3.5	3.2	2.7	7.5	3.1	2.2	3.2	1.6	1.7	1.8	2.1	1.7
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.136	0.130	0.134	0.112	0.100	0.182	0.259	0.275	0.289	0.202	0.124	0.119	0.097	0.102	0.105	0.106	0.099	0.096	0.092	0.092
Max. 1-Hr. Concentration	0.140	0.150	0.130	0.100	0.120	0.190	0.350	0.240	0.360	0.138	0.118	0.087	0.107	0.196	0.113	0.105	0.102	0.091	0.095	0.101
Max. Annual Average	0.025	0.021		0.018	0.026	0.019		0.025		0.024	0.023	0.021	0.02	0.022	0.024	0.025	0.024	0.025	0.024	0.023

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.040	0.030	0.030	0.070	0.060	0.060	0.040	0.030	0.020	0.020	0.020	0.010	0.020	0.020	0.020	0.010	0.010	0.010	0.010	0.010
Max. Annual Average	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Max. 24-Hr. Concentration	0.010	0.010	0.000	0.020	0.030	0.050	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010

Table A-42

A portion of San Bernardino County lies within the South Coast Air Basin.

Mountain Counties Air Basin

County: Amador

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator								0.119	0.117	0.117	0.120	0.123	0.123	0.133	0.129	0.127	0.114	0.113	0.110	0.110
Peak 8-Hour Indicator								0.096	0.095	0.096	0.100	0.103	0.103	0.110	0.109	0.109	0.099	0.098	0.092	0.091
4th High 1-Hr. in 3 Yrs								0.110	0.110	0.119	0.119	0.123	0.127	0.128	0.128	0.126	0.118	0.111	0.108	0.110
Avg. of 4th High 8-Hr. in 3 Yrs								0.090	0.089	0.091	0.091	0.093	0.090	0.095	0.096	0.099	0.091	0.088	0.085	0.084
Maximum 1-Hr. Concentration								0.120	0.110	0.123	0.146	0.127	0.135	0.143	0.121	0.121	0.107	0.118	0.111	0.110
Max. 8-Hr. Concentration								0.105	0.090	0.104	0.112	0.106	0.104	0.115	0.107	0.102	0.087	0.092	0.085	0.088
Days Above State Standard								15	11	15	21	21	9	30	22	13	4	8	12	3
Days Above Nat. 1-Hr. Std.								0	0	0	1	2	1	4	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.								11	5	15	18	14	3	28	13	14	2	7	2	2

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)													30							
Max. 24-Hr. Concentration (Nat)													30							
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator								2.5	2.2	2.0	2.0	1.7	1.5	1.4	1.5	1.6	1.5	1.4	1.3	1.4
Max. 1-Hr. Concentration								3.0	3.0	9.3	9.3	2.2	2.8	2.5	2.2	5.0	3.5	3.0	2.2	5.7
Max. 8-Hr. Concentration								2.4	3.0	1.8	2.6	1.5	1.4	1.4	1.5	1.3	1.4	1.2	1.2	4.3
Days Above State 8-Hr. Std.								0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.								0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-43

Mountain Counties Air Basin

County: Calaveras

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator										0.121	0.118	0.123	0.124	0.128	0.123	0.124	0.116	0.116	0.116	0.117
Peak 8-Hour Indicator										0.105	0.102	0.105	0.105	0.111	0.109	0.109	0.101	0.100	0.099	0.100
4th High 1-Hr. in 3 Yrs										0.114	0.117	0.129	0.130	0.130	0.124	0.124	0.120	0.117	0.117	0.113
Avg. of 4th High 8-Hr. in 3 Yrs										0.099	0.096	0.097	0.093	0.096	0.096	0.100	0.094	0.092	0.091	0.090
Maximum 1-Hr. Concentration										0.121	0.146	0.138	0.140	0.134	0.126	0.134	0.120	0.131	0.117	0.111
Max. 8-Hr. Concentration										0.108	0.107	0.112	0.112	0.109	0.106	0.105	0.090	0.108	0.097	0.088
Days Above State Standard										35	23	24	6	27	21	16	8	14	20	7
Days Above Nat. 1-Hr. Std.										0	1	3	1	1	1	1	0	1	0	0
Days Above Nat. 8-Hr. Std.										34	19	18	4	28	18	17	5	12	18	4

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)										44	118	36	112	34	63	36	42	47	39	34
Max. 24-Hr. Concentration (Nat)										44	118	36	112	35	65	35	44	44	40	33
Annual Average (State)											20.9	17.7		15.6		17.7	19.2	20.9	18.2	17.3
Annual Average (Nat)											21.0	17.8	19.9	15.8	20.7	17.9	19.4	20.9	18.2	17.2
Calc Days Above State 24-Hr Std											12	0		0		0	0	0	0	0
Calc Days Above Nat 24-Hr Std											0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															33.0	48.0	31.0	40.0	20.0	24.0
Max. 24-Hr. Concentration (Nat)															33.0	48.0	31.0	40.0	20.0	24.0
98th Percentile of 24-Hr Conc.															28.0	30.0	18.0	30.0	19.0	21.0
Annual Average (State)															11.1	9.0	8.1	9.9	8.6	7.6
Avg. of Qtrly. Means (Nat)															11.1	9.0	8.1	9.9	8.6	7.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator										0.7	1.0	0.9	0.9	0.9	0.9	0.8	1.1	1.0	1.0	0.7
Max. 1-Hr. Concentration										1.5	2.1	1.7	2.1	1.8	1.8	1.2	6.2	1.2	0.9	1.6
Max. 8-Hr. Concentration										0.7	1.8	0.9	1.7	0.9	0.8	0.9	4.3	0.8	0.7	1.1
Days Above State 8-Hr. Std.										0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.										0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-44

Mountain Counties Air Basin

County: El Dorado

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator					0.138			0.127	0.122	0.127	0.131	0.137	0.140	0.147	0.144	0.144	0.137	0.143	0.146	0.143
Peak 8-Hour Indicator					0.120			0.109	0.106	0.109	0.112	0.116	0.113	0.119	0.119	0.120	0.113	0.119	0.122	0.121
4th High 1-Hr. in 3 Yrs					0.120			0.120	0.120	0.124	0.124	0.126	0.123	0.143	0.144	0.143	0.128	0.143	0.143	0.142
Avg. of 4th High 8-Hr. in 3 Yrs					0.103			0.098	0.095	0.097	0.099	0.103	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.102
Maximum 1-Hr. Concentration					0.130			0.120	0.120	0.130	0.126	0.136	0.145	0.163	0.144	0.128	0.148	0.156	0.145	0.113
Max. 8-Hr. Concentration					0.110			0.112	0.108	0.104	0.113	0.113	0.106	0.127	0.118	0.113	0.109	0.137	0.122	0.102
Days Above State Standard					21			29	10	26	32	41	19	32	39	37	42	50	37	16
Days Above Nat. 1-Hr. Std.					2			0	0	2	1	3	1	6	4	2	1	6	4	0
Days Above Nat. 8-Hr. Std.					24			29	12	22	31	36	16	26	40	31	35	42	27	11

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)								103	62	34	53	58	62	39	46	38	51	36	50	28
Max. 24-Hr. Concentration (Nat)				56	59	89		103	62	34	53	58	62	41	49	38	52	37	51	28
Annual Average (State)									18.4	18.0	18.1		17.4	14.3	17.7		16.0	16.4	14.4	14.8
Annual Average (Nat)									18.4	18.0	18.1	17.0	17.4	14.9	18.5	16.5	16.8	17.3	15.1	15.4
Calc Days Above State 24-Hr Std									6	0	6		6	0	0		6	0	0	0
Calc Days Above Nat 24-Hr Std									0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																			21.7	33.0
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator					4.1	4.3		1.6	1.3	1.3	1.2	1.0	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.9
Max. 1-Hr. Concentration					6.0	5.0		3.0	2.0	1.7	1.6	1.3	1.6	1.7	1.4	2.7	1.4	1.9	1.1	5.1
Max. 8-Hr. Concentration					4.6	3.5		2.4	1.5	1.0	1.0	0.9	0.8	0.9	0.9	1.0	0.8	0.8	0.7	4.4
Days Above State 8-Hr. Std.					0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.					0	0		0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-45

A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mountain Counties Air Basin

County: Mariposa

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator			0.129	0.124	0.121	0.116	0.117	0.117	0.115	0.114	0.113	0.108	0.111	0.114	0.120	0.118	0.113	0.108	0.111	0.111
Peak 8-Hour Indicator			0.106	0.103	0.102	0.104	0.103	0.103	0.109	0.107	0.104	0.104	0.106	0.106	0.108	0.105	0.102	0.098	0.098	0.098
4th High 1-Hr. in 3 Yrs			0.116	0.119	0.119	0.113	0.110	0.110	0.110	0.110	0.111	0.109	0.110	0.111	0.112	0.112	0.112	0.106	0.113	0.113
Avg. of 4th High 8-Hr. in 3 Yrs			0.093	0.092	0.090	0.090	0.088	0.089	0.096	0.095	0.095	0.096	0.095	0.095	0.095	0.094	0.091	0.089	0.091	0.090
Maximum 1-Hr. Concentration			0.145	0.119	0.110	0.120	0.110	0.111	0.120	0.113	0.114	0.111	0.120	0.114	0.155	0.121	0.116	0.106	0.135	0.137
Max. 8-Hr. Concentration			0.111	0.096	0.093	0.096	0.102	0.095	0.111	0.104	0.103	0.107	0.105	0.103	0.105	0.100	0.098	0.097	0.103	0.124
Days Above State Standard			27	26	2	20	19	10	17	10	20	28	7	13	16	10	4	19	15	7
Days Above Nat. 1-Hr. Std.			3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1
Days Above Nat. 8-Hr. Std.			22	20	4	20	31	9	22	12	24	30	7	14	24	14	8	26	28	9

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)					84	209	350	104	126	115	71	106	62	36	75	89	277	72	58	124
Max. 24-Hr. Concentration (Nat)				180	84	209	350	104	126	115	71	106	62	40	82	98	312	76	66	133
Annual Average (State)							48.4			33.9							29.6	25.9	21.0	
Annual Average (Nat)						40.9	47.8	30.9		34.6	28.0			20.4	26.7	26.3	33.3	28.5	23.1	
Calc Days Above State 24-Hr Std							95			87							37	18	6	
Calc Days Above Nat 24-Hr Std						10	14	0		0	0		0	0	0	0	6	0	0	

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																		29.0	54.0	148.4
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				4.8
Max. 1-Hr. Concentration								6.2											2.5	6.5
Max. 8-Hr. Concentration								4.5											1.5	5.7
Days Above State 8-Hr. Std.								0											0	0
Days Above Nat. 8-Hr. Std.								0											0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																		0.043	0.019	
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-46

Mountain Counties Air Basin

County: Nevada

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator					0.118	0.125	0.118	0.110	0.076	0.111	0.111	0.118	0.113	0.114	0.114	0.117	0.116	0.116	0.117	0.118
Peak 8-Hour Indicator					0.111	0.110	0.104	0.096	0.064	0.097	0.097	0.104	0.103	0.103	0.101	0.104	0.103	0.105	0.107	0.106
4th High 1-Hr. in 3 Yrs					0.100	0.110	0.110	0.110	0.070	0.100	0.100	0.110	0.108	0.111	0.109	0.115	0.116	0.117	0.116	0.117
Avg. of 4th High 8-Hr. in 3 Yrs					0.097	0.094	0.092	0.088	0.065	0.077	0.085	0.087	0.089	0.095	0.095	0.096	0.097	0.098	0.098	0.097
Maximum 1-Hr. Concentration					0.120	0.150	0.110	0.110	0.090	0.110	0.099	0.111	0.108	0.119	0.165	0.130	0.116	0.127	0.120	0.126
Max. 8-Hr. Concentration					0.107	0.115	0.096	0.087	0.078	0.107	0.092	0.104	0.101	0.099	0.103	0.113	0.106	0.113	0.103	0.111
Days Above State Standard					12	8	7	2	0	8	3	22	10	16	20	21	21	24	23	11
Days Above Nat. 1-Hr. Std.					0	2	0	0	0	0	0	0	0	0	1	1	0	1	0	1
Days Above Nat. 8-Hr. Std.					11	9	7	5	0	9	4	29	17	25	33	28	23	28	23	14

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)								30	34			44	81			49				
Max. 24-Hr. Concentration (Nat)				38			44	43	34			49	136	92	84	57				
Annual Average (State)													28.3							
Annual Average (Nat)								22.3					28.4	14.4	25.3					
Calc Days Above State 24-Hr Std													41							
Calc Days Above Nat 24-Hr Std								0					0	0	0					

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															50.0	27.0	120.0	23.0	21.0	34.0
Max. 24-Hr. Concentration (Nat)															50.0	27.0	120.0	23.0	21.0	34.0
98th Percentile of 24-Hr Conc.																23.0	26.0	16.0	20.0	18.0
Annual Average (State)																			7.2	7.7
Avg. of Qtrly. Means (Nat)																8.8	9.4	7.5	7.2	6.8

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration							1.0	0.0	10.0	9.0										
Max. 8-Hr. Concentration							0.1	0.0	5.4	5.4										
Days Above State 8-Hr. Std.							0	0	0	0										
Days Above Nat. 8-Hr. Std.							0	0	0	0										

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-47

Mountain Counties Air Basin

County: Placer

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator				0.155	0.134	0.134	0.109	0.120	0.119	0.118	0.119	0.116	0.111	0.106	0.111	0.114	0.113	0.129	0.123	0.118
Peak 8-Hour Indicator				0.122	0.114	0.114	0.108	0.101	0.099	0.100	0.102	0.103	0.097	0.095	0.095	0.096	0.094	0.114	0.105	0.103
4th High 1-Hr. in 3 Yrs				0.140	0.140	0.140	0.100	0.110	0.110	0.120	0.119	0.117	0.109	0.103	0.105	0.105	0.104	0.116	0.118	0.118
Avg. of 4th High 8-Hr. in 3 Yrs				0.108	0.102	0.089	0.063	0.092	0.092	0.092	0.092	0.091	0.086	0.086	0.086	0.079	0.073	0.077	0.088	0.092
Maximum 1-Hr. Concentration				0.160	0.120	0.090	0.060	0.130	0.120	0.122	0.130	0.108	0.103	0.132	0.159	0.070	0.095	0.142	0.121	0.106
Max. 8-Hr. Concentration				0.138	0.101	0.078	0.035	0.098	0.097	0.107	0.100	0.091	0.097	0.108	0.093	0.058	0.088	0.113	0.097	0.102
Days Above State Standard				39	24	0	0	17	9	15	16	4	2	11	9	0	2	17	13	12
Days Above Nat. 1-Hr. Std.				7	0	0	0	1	0	0	1	0	0	1	1	0	0	2	0	0
Days Above Nat. 8-Hr. Std.				35	22	0	0	12	4	12	11	5	2	8	9	0	2	18	12	9

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)											86	60	74							
Max. 24-Hr. Concentration (Nat)											86	60	74							
Annual Average (State)																				
Annual Average (Nat)												21.8	21.9							
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std												0	0							

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-48

Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Mountain Counties Air Basin

County: Plumas

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator		0.090	0.090						0.087	0.090	0.094	0.094	0.096	0.083	0.084	0.083	0.084	0.088	0.088	0.087
Peak 8-Hour Indicator		0.082	0.082						0.075	0.081	0.087	0.087	0.089	0.076	0.077	0.076	0.078	0.081	0.080	0.084
4th High 1-Hr. in 3 Yrs		0.080	0.080					0.050	0.080	0.090	0.090	0.091	0.091	0.081	0.083	0.083	0.083	0.087	0.087	0.087
Avg. of 4th High 8-Hr. in 3 Yrs		0.073	0.071					0.037	0.053	0.062	0.077	0.078	0.065	0.060	0.060	0.070	0.069	0.071	0.069	0.067
Maximum 1-Hr. Concentration		0.090	0.080					0.050	0.090	0.090	0.105	0.091	0.046	0.087	0.086	0.081	0.086	0.091	0.075	0.073
Max. 8-Hr. Concentration		0.078	0.073					0.040	0.076	0.083	0.096	0.080	0.042	0.074	0.077	0.076	0.072	0.084	0.064	0.066
Days Above State Standard		0	0					0	0	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 1-Hr. Std.		0	0					0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.		0	0					0	0	0	2	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				113	144	138	162	120	130	98	52	55	66	69	115	67	60	48	47	82
Max. 24-Hr. Concentration (Nat)				153	144	138	162	120	130	98	52	55	66	74	125	75	60	49	49	84
Annual Average (State)										33.4	24.2	21.5		18.5		19.9			18.1	26.3
Annual Average (Nat)						38.2		37.5		33.0	24.0	21.4	22.4	25.3	27.6	21.3	22.5		19.7	28.0
Calc Days Above State 24-Hr Std										42	6	6		6		25			0	30
Calc Days Above Nat 24-Hr Std						0		0		0	0	0	0	0	0	0	0		0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															92.0	46.0	58.0	41.0	47.8	53.8
Max. 24-Hr. Concentration (Nat)															92.0	46.0	58.0	41.0	43.0	44.0
98th Percentile of 24-Hr Conc.															84.0		43.0		40.0	33.0
Annual Average (State)																				11.7
Avg. of Qtrly. Means (Nat)																	15.6		13.3	11.7

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator		4.5	4.5																	
Max. 1-Hr. Concentration		6.0	3.0																	
Max. 8-Hr. Concentration		4.2	2.3																	
Days Above State 8-Hr. Std.		0	0																	
Days Above Nat. 8-Hr. Std.		0	0																	

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator		0.046	0.046																	
Max. 1-Hr. Concentration		0.050	0.040																	
Max. Annual Average																				

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-49

Mountain Counties Air Basin

County: Sierra

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)												114	138			34				
Max. 24-Hr. Concentration (Nat)												114	138	60	68	39				
Annual Average (State)																				
Annual Average (Nat)													32.0	22.6	25.0					
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std													0	0	0					

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-50

Mountain Counties Air Basin

County: Tuolumne

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator				0.097	0.093	0.092	0.089	0.102	0.102	0.103	0.105	0.112	0.112	0.118	0.115	0.113	0.108	0.109	0.106	0.105
Peak 8-Hour Indicator				0.088	0.086	0.086	0.081	0.093	0.091	0.091	0.094	0.099	0.099	0.103	0.104	0.102	0.101	0.102	0.093	0.094
4th High 1-Hr. in 3 Yrs				0.091	0.091	0.091	0.090	0.090	0.100	0.101	0.103	0.116	0.117	0.117	0.116	0.114	0.107	0.109	0.104	0.102
Avg. of 4th High 8-Hr. in 3 Yrs				0.081	0.078	0.077	0.075	0.083	0.085	0.085	0.087	0.090	0.088	0.092	0.092	0.096	0.092	0.091	0.085	0.084
Maximum 1-Hr. Concentration				0.096	0.090	0.090	0.090	0.100	0.120	0.107	0.135	0.121	0.117	0.122	0.130	0.109	0.109	0.132	0.116	0.089
Max. 8-Hr. Concentration				0.086	0.078	0.081	0.078	0.097	0.088	0.094	0.105	0.108	0.107	0.107	0.103	0.104	0.097	0.101	0.088	0.082
Days Above State Standard				2	0	0	0	2	5	8	9	25	8	21	17	13	4	16	8	0
Days Above Nat. 1-Hr. Std.				0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0
Days Above Nat. 8-Hr. Std.				3	0	0	0	1	6	9	14	21	7	26	25	26	5	25	7	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

No Monitoring Data Available

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator								2.9	2.9	2.8	2.8	2.7	2.4	5.1	5.4	5.7	2.4	1.6	1.6	1.4
Max. 1-Hr. Concentration								4.0	5.0	4.4	3.9	4.5	6.6	6.7	4.1	3.4	2.8	3.7	2.5	1.8
Max. 8-Hr. Concentration								2.6	3.0	2.7	3.4	2.6	1.9	5.5	3.0	1.6	1.6	1.5	1.4	1.3
Days Above State 8-Hr. Std.								0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.								0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-51

North Central Coast Air Basin

County: Monterey

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.098	0.095	0.095	0.092	0.098	0.096	0.095	0.093	0.091	0.092	0.094	0.093	0.090	0.093	0.084	0.087	0.082	0.081	0.083	0.084
Peak 8-Hour Indicator	0.083	0.081	0.082	0.078	0.084	0.084	0.080	0.079	0.079	0.080	0.080	0.081	0.079	0.079	0.068	0.071	0.069	0.070	0.072	0.075
4th High 1-Hr. in 3 Yrs	0.090	0.090	0.090	0.090	0.090	0.090	0.100	0.090	0.090	0.090	0.090	0.091	0.087	0.089	0.084	0.085	0.081	0.082	0.082	0.080
Avg. of 4th High 8-Hr. in 3 Yrs	0.074	0.071	0.071	0.068	0.072	0.075	0.073	0.071	0.069	0.070	0.069	0.067	0.066	0.066	0.062	0.064	0.063	0.064	0.066	0.068
Maximum 1-Hr. Concentration	0.110	0.080	0.090	0.090	0.130	0.090	0.100	0.090	0.110	0.093	0.093	0.094	0.091	0.091	0.086	0.095	0.085	0.082	0.092	0.093
Max. 8-Hr. Concentration	0.087	0.076	0.077	0.077	0.095	0.080	0.078	0.085	0.083	0.092	0.077	0.081	0.076	0.076	0.072	0.079	0.079	0.073	0.081	0.079
Days Above State Standard	1	0	0	0	3	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				51	54	56	46	41	86	50	50	50	91	54	94	77	72	60	90	58
Max. 24-Hr. Concentration (Nat)				51	54	57	55	45	86	50	50	50	91	52	91	74	68	62	87	56
Annual Average (State)						22.5			11.6	19.5	20.6	20.0	21.4		30.3	31.2		28.9	31.6	25.9
Annual Average (Nat)				23.0	25.4	22.5	23.4		11.7	19.5	20.6	20.0	21.4	27.0	29.0	29.9	29.4	27.7	30.1	24.9
Calc Days Above State 24-Hr Std						6			0	0	0	0	6		12	24		25	41	13
Calc Days Above Nat 24-Hr Std				0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															30.8	26.4	25.6	23.5	15.9	22.3
Max. 24-Hr. Concentration (Nat)															30.8	26.4	25.6	23.5	15.9	22.3
98th Percentile of 24-Hr Conc.															25.0	21.5	21.7	22.8	14.0	15.5
Annual Average (State)																		9.1	7.3	
Avg. of Qtrly. Means (Nat)															9.8	7.9	8.6	9.1	7.3	7.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	2.4	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.0	2.0	2.0	1.6	1.6	1.5	1.4	1.2
Max. 1-Hr. Concentration	6.0	4.0	5.0	6.0	5.0	5.0	4.0	4.0	4.0	4.6	3.2	5.5	4.4	3.8	3.8	3.5	3.3	2.3	2.8	5.5
Max. 8-Hr. Concentration	3.3	2.3	2.3	2.4	2.4	2.5	2.5	2.9	2.7	2.1	2.1	2.6	1.8	2.2	1.8	1.4	1.6	1.4	1.1	1.2
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.072	0.083	0.083	0.077	0.072	0.071	0.068	0.062	0.064	0.064	0.062	0.059	0.059	0.059	0.054	0.046	0.045	0.046	0.046	0.050
Max. 1-Hr. Concentration	0.090	0.110	0.070	0.070	0.070	0.060	0.060	0.070	0.070	0.067	0.054	0.060	0.056	0.085	0.054	0.071	0.041	0.049	0.053	0.139
Max. Annual Average	0.015	0.014		0.014	0.014	0.012	0.011	0.012	0.012	0.012		0.011	0.010	0.010		0.007	0.007	0.007	0.006	0.007

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.01	0.01	0.01	0.01	0.01	0.01														
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00														
Max. 24-Hr. Concentration	0.00	0.01	0.00	0.00	0.00	0.00														

Table A-52

North Central Coast Air Basin

County: San Benito

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.113	0.109	0.146	0.136	0.131	0.115	0.114	0.115	0.111	0.107	0.106	0.111	0.112	0.113	0.103	0.104	0.100	0.104	0.104	0.103
Peak 8-Hour Indicator	0.090	0.088	0.115	0.109	0.105	0.092	0.092	0.093	0.091	0.086	0.086	0.094	0.094	0.096	0.090	0.089	0.085	0.088	0.089	0.089
4th High 1-Hr. in 3 Yrs	0.100	0.100	0.134	0.134	0.139	0.120	0.110	0.110	0.110	0.110	0.104	0.114	0.114	0.114	0.109	0.107	0.100	0.104	0.106	0.104
Avg. of 4th High 8-Hr. in 3 Yrs	0.081	0.078	0.103	0.095	0.090	0.084	0.083	0.084	0.083	0.081	0.081	0.085	0.084	0.086	0.082	0.082	0.079	0.081	0.081	0.081
Maximum 1-Hr. Concentration	0.110	0.100	0.146	0.127	0.140	0.120	0.140	0.110	0.110	0.101	0.138	0.120	0.112	0.124	0.107	0.098	0.108	0.115	0.111	0.093
Max. 8-Hr. Concentration	0.091	0.083	0.113	0.096	0.100	0.095	0.108	0.090	0.087	0.084	0.102	0.101	0.091	0.097	0.085	0.084	0.088	0.094	0.088	0.083
Days Above State Standard	11	1	37	14	8	10	9	9	8	6	7	16	1	9	2	2	3	8	2	0
Days Above Nat. 1-Hr. Std.	0	0	5	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	0	26	6	1	5	3	3	2	0	3	9	1	6	1	0	2	5	2	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				58	58	48	55	17	61	37	50	38	34	39	68	41	42	59	36	41
Max. 24-Hr. Concentration (Nat)				71	58	48	55	17	61	37	50	38	34	37	67	40	42	59	36	40
Annual Average (State)					24.3				18.9		17.2	16.8	18.0		22.6	16.4		18.5	16.7	15.6
Annual Average (Nat)					24.4		22.6		18.8	16.9	17.2	16.8	18.0	15.7	21.8	15.7	17.6	17.9	16.4	15.1
Calc Days Above State 24-Hr Std					6				12		0	0	0		13	0		7	0	0
Calc Days Above Nat 24-Hr Std					0		0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-53

North Central Coast Air Basin

County: Santa Cruz

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.103	0.096	0.097	0.094	0.092	0.084	0.084	0.082	0.110	0.102	0.102	0.098	0.095	0.096	0.088	0.089	0.086	0.087	0.085	0.087
Peak 8-Hour Indicator	0.082	0.077	0.074	0.072	0.072	0.069	0.066	0.064	0.093	0.087	0.087	0.079	0.077	0.078	0.073	0.075	0.072	0.074	0.073	0.075
4th High 1-Hr. in 3 Yrs	0.090	0.090	0.090	0.090	0.090	0.080	0.090	0.080	0.100	0.100	0.100	0.094	0.091	0.092	0.084	0.089	0.084	0.085	0.085	0.085
Avg. of 4th High 8-Hr. in 3 Yrs	0.069	0.066	0.067	0.062	0.061	0.060	0.058	0.066	0.073	0.072	0.062	0.066	0.067	0.068	0.066	0.066	0.065	0.064	0.065	0.066
Maximum 1-Hr. Concentration	0.110	0.090	0.090	0.080	0.100	0.100	0.120	0.090	0.100	0.094	0.097	0.107	0.089	0.107	0.097	0.096	0.085	0.086	0.098	0.091
Max. 8-Hr. Concentration	0.088	0.077	0.073	0.070	0.087	0.080	0.082	0.075	0.086	0.078	0.070	0.088	0.071	0.077	0.072	0.078	0.073	0.077	0.074	0.083
Days Above State Standard	2	0	0	0	1	1	2	0	7	0	1	2	0	1	1	1	0	0	1	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	2	0	0	0	1	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				65	51	49	49	36	102	106	152	115	113	78	106	52	74	81	72	83
Max. 24-Hr. Concentration (Nat)				65	51	49	49	36	102	106	152	115	113	76	103	50	72	77	70	80
Annual Average (State)						23.8	24.3		21.7	31.1	36.3	32.8	36.9		32.3	27.1		28.0	28.6	28.2
Annual Average (Nat)						23.9	24.3		21.7	31.1	36.4	32.8	37.0	28.5	30.9	26.2	28.7	26.8	27.3	27.3
Calc Days Above State 24-Hr Std						0	0		12	31	71	71	72		50	18		24	31	43
Calc Days Above Nat 24-Hr Std						0	0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															31.3	23.3	23.1	22.8	15.0	22.6
Max. 24-Hr. Concentration (Nat)															31.3	23.3	23.1	22.8	15.0	22.6
98th Percentile of 24-Hr Conc.															21.9	17.9	23.1	22.0	13.6	14.9
Annual Average (State)																7.9	9.1	8.6		6.8
Avg. of Qtrly. Means (Nat)															9.4	7.9	9.1	8.6	7.4	6.8

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator			1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8
Max. 1-Hr. Concentration			1.0	2.0	3.0	2.0	1.0	2.0	1.0	2.2	1.4	3.0	0.9	1.0	2.0	1.3	1.9	1.3	1.6	2.1
Max. 8-Hr. Concentration			1.0	1.3	1.3	1.0	1.0	1.2	1.0	1.3	0.9	1.0	0.7	0.9	0.8	0.8	1.0	0.8	0.7	1.0
Days Above State 8-Hr. Std.			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator			0.044	0.048	0.049	0.050	0.049	0.047	0.043	0.051	0.052	0.050	0.045	0.041	0.035	0.036	0.036	0.035	0.036	0.035
Max. 1-Hr. Concentration		0.040	0.050	0.050	0.040	0.050	0.040	0.040	0.050	0.045	0.053	0.042	0.031	0.039	0.032	0.035	0.042	0.035	0.034	0.032
Max. Annual Average			0.005		0.008			0.006		0.005		0.005		0.004	0.005	0.005	0.005	0.005		

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator				0.02	0.02	0.02	0.01	0.01	0.03	0.04	0.05	0.04	0.03	0.01	0.01	0.01	0.02	0.03	0.03	0.03
Max. Annual Average		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration		0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00

Table A-54

North Coast Air Basin

County: Del Norte

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator				0.062	0.058	0.066	0.063	0.063	0.062	0.063	0.062									
Peak 8-Hour Indicator				0.053	0.050	0.061	0.059	0.059	0.056	0.056	0.054									
4th High 1-Hr. in 3 Yrs			0.039	0.059	0.059	0.060	0.060	0.060	0.060	0.060	0.060									
Avg. of 4th High 8-Hr. in 3 Yrs			0.035	0.043	0.042	0.053	0.051	0.051	0.050	0.051	0.049									
Maximum 1-Hr. Concentration			0.040	0.068	0.050	0.070	0.060	0.070	0.060	0.064	0.056									
Max. 8-Hr. Concentration			0.038	0.060	0.042	0.060	0.051	0.061	0.053	0.061	0.052									
Days Above State Standard			0	0	0	0	0	0	0	0	0									
Days Above Nat. 1-Hr. Std.			0	0	0	0	0	0	0	0	0									
Days Above Nat. 8-Hr. Std.			0	0	0	0	0	0	0	0	0									

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)											41	42	58	50	42	46	48	39	37	44
Max. 24-Hr. Concentration (Nat)				46							41	42	58	48	39	44	46	39	39	42
Annual Average (State)													20.8		18.4	17.6	17.3			18.6
Annual Average (Nat)													20.9		17.3		16.9	18.7		17.9
Calc Days Above State 24-Hr Std													6		0	0	0			0
Calc Days Above Nat 24-Hr Std											0		0		0	0	0	0		0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-55

North Coast Air Basin

County: Humboldt

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator							0.049	0.049												
Peak 8-Hour Indicator							0.041	0.041												
4th High 1-Hr. in 3 Yrs						0.030	0.040	0.040												
Avg. of 4th High 8-Hr. in 3 Yrs						0.030	0.035	0.034												
Maximum 1-Hr. Concentration						0.040	0.050	0.040												
Max. 8-Hr. Concentration						0.031	0.042	0.040												
Days Above State Standard						0	0	0												
Days Above Nat. 1-Hr. Std.						0	0	0												
Days Above Nat. 8-Hr. Std.						0	0	0												

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				98	92	83				77	68	87	56	45	60	53	67	38	71	64
Max. 24-Hr. Concentration (Nat)				98	92	83				77	68	87	56	43	57	51	64	36	68	61
Annual Average (State)					31.4	28.0				24.3		19.0	21.0	15.9	19.9	21.8	21.3			
Annual Average (Nat)				36.2	31.4	28.0				24.3	19.9	18.4	21.2	14.8	19.2	20.9	20.8	18.5		20.7
Calc Days Above State 24-Hr Std					35	29				12		12	6	0	13	6	13			
Calc Days Above Nat 24-Hr Std				0	0	0				0	0	0	0	0	0	0	0	0		0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															36.9	24.0	32.6	23.7	36.1	25.6
Max. 24-Hr. Concentration (Nat)															36.9	24.0	32.6	23.7	36.1	25.6
98th Percentile of 24-Hr Conc.															27.7	21.5	29.0	22.6		23.1
Annual Average (State)															9.1		9.4			
Avg. of Qtrly. Means (Nat)															9.1	9.1	9.4	7.9		8.2

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator					4.6	4.6														
Max. 1-Hr. Concentration					10.0	9.0														
Max. 8-Hr. Concentration					4.5	3.5														
Days Above State 8-Hr. Std.					0	0														
Days Above Nat. 8-Hr. Std.					0	0														

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-56

North Coast Air Basin

County: Mendocino

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.073	0.074	0.083						0.073	0.075	0.075	0.076	0.074	0.080	0.079	0.079	0.076	0.076	0.080	0.080
Peak 8-Hour Indicator	0.056	0.061	0.070						0.059	0.061	0.062	0.062	0.060	0.063	0.066	0.065	0.063	0.063	0.065	0.066
4th High 1-Hr. in 3 Yrs	0.070	0.070	0.080	0.080				0.050	0.060	0.074	0.080	0.073	0.069	0.069	0.073	0.073	0.073	0.083	0.083	0.083
Avg. of 4th High 8-Hr. in 3 Yrs	0.050	0.052	0.056	0.066				0.038	0.047	0.050	0.056	0.052	0.050	0.052	0.058	0.058	0.055	0.055	0.057	0.058
Maximum 1-Hr. Concentration	0.070	0.070	0.090	0.090				0.060	0.080	0.087	0.084	0.058	0.071	0.090	0.079	0.071	0.070	0.092	0.090	0.070
Max. 8-Hr. Concentration	0.056	0.062	0.076	0.076				0.043	0.065	0.061	0.065	0.049	0.061	0.071	0.069	0.059	0.055	0.072	0.066	0.056
Days Above State Standard	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				101	82	60	74	51	54	62	54	56	66	52	69	51	64	72	67	45
Max. 24-Hr. Concentration (Nat)				101	82	60	74	51	54	62	54	56	66	50	66	49	61	74	65	44
Annual Average (State)					29.7	23.7	25.4	21.9	23.2	21.9	26.0	24.4	23.4	22.1		23.5	25.4	22.9	22.2	20.6
Annual Average (Nat)					29.9	23.7	25.3	21.8	22.6	22.1	26.1	24.6	23.4	21.1	24.3	22.4	24.1	22.2	21.4	19.8
Calc Days Above State 24-Hr Std					40	24	17	6	13	6	13	7	6	6		6	24	12	25	0
Calc Days Above Nat 24-Hr Std					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															35.6	22.3	38.3	59.7	15.6	18.5
Max. 24-Hr. Concentration (Nat)															35.6	22.3	38.3	59.7	15.6	18.5
98th Percentile of 24-Hr Conc.															26.3		27.0	39.7	15.2	14.4
Annual Average (State)															8.8			9.1	7.4	7.0
Avg. of Qtrly. Means (Nat)															8.9		8.0	9.1	7.4	7.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.2	5.2							2.4		3.2	3.4	3.3	3.1	3.6	3.4	3.3	2.6	2.3	2.0
Max. 1-Hr. Concentration	8.0	6.0		1.0				1.0	6.0		5.4	4.8	7.4	4.8	5.2	4.4	4.0	3.1	5.3	2.3
Max. 8-Hr. Concentration	5.5	3.1		1.0				0.6	2.4		3.2	2.7	3.2	3.5	3.7	2.6	2.3	2.5	2.2	1.8
Days Above State 8-Hr. Std.	0	0		0				0	0		0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0		0				0	0		0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator									0.054	0.053	0.053	0.053	0.049	0.050	0.054	0.053	0.052	0.042	0.045	0.044
Max. 1-Hr. Concentration				0.030				0.080	0.050	0.079	0.078	0.044	0.061	0.052	0.066	0.042	0.052	0.080	0.053	0.037
Max. Annual Average										0.008	0.009		0.010	0.010	0.010	0.011	0.010	0.010	0.009	0.009

SULFUR DIOXIDE (ppm)	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Peak 1-Hr. Indicator										0.01	0.01									
Max. Annual Average					0.00				0.00	0.00	0.00									
Max. 24-Hr. Concentration					0.01				0.01	0.00	0.00									

Table A-57

North Coast Air Basin

County: Sonoma

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator								0.085	0.088	0.089	0.090	0.088	0.091	0.103	0.109	0.105	0.093	0.083	0.082	0.082
Peak 8-Hour Indicator								0.068	0.072	0.072	0.074	0.074	0.079	0.087	0.092	0.089	0.078	0.069	0.068	0.067
4th High 1-Hr. in 3 Yrs								0.080	0.090	0.090	0.090	0.090	0.090	0.110	0.110	0.110	0.100	0.080	0.080	0.080
Avg. of 4th High 8-Hr. in 3 Yrs								0.063	0.065	0.066	0.069	0.069	0.072	0.077	0.082	0.076	0.069	0.063	0.062	0.061
Maximum 1-Hr. Concentration								0.090	0.090	0.100	0.100	0.080	0.100	0.130	0.100	0.090	0.090	0.080	0.090	0.090
Max. 8-Hr. Concentration								0.072	0.073	0.080	0.090	0.071	0.091	0.106	0.087	0.077	0.073	0.068	0.080	0.077
Days Above State Standard								0	0	1	1	0	2	7	4	0	0	0	0	0
Days Above Nat. 1-Hr. Std.								0	0	0	0	0	0	1	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.								0	0	0	1	0	1	5	2	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				62	85	266	78	58	53	57	43	40	54	33	74	45	63	37	45	33
Max. 24-Hr. Concentration (Nat)				86	85	266	78	58	53	57	43	40	54	32	71	44	59	36	45	33
Annual Average (State)						23.8	24.8		20.7	18.4		16.4	16.5	16.6	19.4	12.6		15.6	15.1	15.7
Annual Average (Nat)				25.4	27.2	23.8	24.2		20.3	18.4		16.5	16.5	16.0	18.3	14.7	15.0	15.0	14.8	15.2
Calc Days Above State 24-Hr Std						22	23		12	13		0	5	0	18	0		0	0	0
Calc Days Above Nat 24-Hr Std				0	0	6	0		0	0		0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-58

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

North Coast Air Basin

County: Trinity

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)												63	54	47	95	51	72	53	54	43
Max. 24-Hr. Concentration (Nat)				125							41	72	54	46	100	51	73	52	57	42
Annual Average (State)													17.8	18.1	24.3	18.8				
Annual Average (Nat)													18.0			18.7				
Calc Days Above State 24-Hr Std													6	0	36	7				
Calc Days Above Nat 24-Hr Std											0	0	0	0	0	0	0			

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator			3.4																	
Max. 1-Hr. Concentration			4.0																	
Max. 8-Hr. Concentration			3.0																	
Days Above State 8-Hr. Std.			0																	
Days Above Nat. 8-Hr. Std.			0																	

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-59

Northeast Plateau Air Basin

County: Lassen

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)												42	84	48	93	74	91			
Max. 24-Hr. Concentration (Nat)												42	84	52	100	80	105			
Annual Average (State)																				
Annual Average (Nat)																				
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std																				

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-60

Northeast Plateau Air Basin

County: Modoc

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)										101	78	74	97	41	89	74				
Max. 24-Hr. Concentration (Nat)										101	78	74	97	62	94	79	67			
Annual Average (State)																				
Annual Average (Nat)											30.3				26.3	22.5	19.8			
Calc Days Above State 24-Hr Std																				
Calc Days Above Nat 24-Hr Std											0				0	0	0			

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															40.0	38.0	35.0	5.0	10.0	
Max. 24-Hr. Concentration (Nat)															40.0	38.0	35.0	5.0	10.0	
98th Percentile of 24-Hr Conc.															27.0	37.0				
Annual Average (State)																8.5				
Avg. of Qtrly. Means (Nat)															7.9	8.5				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-61

Northeast Plateau Air Basin

County: Siskiyou

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.076	0.078	0.081	0.082	0.083	0.082	0.084	0.081	0.073	0.075	0.074	0.075	0.074	0.078	0.078	0.081	0.080	0.085	0.083	0.082
Peak 8-Hour Indicator	0.068	0.071	0.075	0.074	0.075	0.075	0.075	0.073	0.067	0.067	0.064	0.064	0.066	0.070	0.069	0.070	0.068	0.071	0.073	0.072
4th High 1-Hr. in 3 Yrs	0.070	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070	0.070	0.070	0.070	0.070	0.075	0.075	0.078	0.078	0.081	0.079	0.079
Avg. of 4th High 8-Hr. in 3 Yrs	0.061	0.064	0.069	0.069	0.069	0.067	0.059	0.057	0.051	0.058	0.057	0.059	0.058	0.061	0.062	0.063	0.053	0.055	0.057	0.065
Maximum 1-Hr. Concentration	0.080	0.080	0.090	0.080	0.080	0.080	0.050	0.080	0.070	0.080	0.070	0.070	0.082	0.078	0.070	0.082	0.049	0.087	0.089	0.077
Max. 8-Hr. Concentration	0.075	0.070	0.081	0.071	0.076	0.076	0.046	0.073	0.070	0.068	0.062	0.063	0.074	0.071	0.067	0.071	0.038	0.075	0.074	0.071
Days Above State Standard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				58	59	63	60	74	60	61	46	188	40	63	51	33	33	73	31	29
Max. 24-Hr. Concentration (Nat)				92	59	63	60	74	60	61	46	188	40	66	56	53	41	86	33	32
Annual Average (State)					24.8			23.6		22.1	16.0				16.8			17.5	12.8	12.8
Annual Average (Nat)				25.0	24.8	23.5		23.6		22.1	16.0	13.6	12.9	11.1	17.7	13.9	14.1	18.6	13.3	13.6
Calc Days Above State 24-Hr Std					29			24		0	0				0			6	0	0
Calc Days Above Nat 24-Hr Std				0	0	0		0		0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration			12.0	4.0																
Max. 8-Hr. Concentration			10.4	1.8																
Days Above State 8-Hr. Std.			1	0																
Days Above Nat. 8-Hr. Std.			1	0																

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-62

Sacramento Valley Air Basin

County: Butte

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.094	0.097	0.102	0.103	0.105	0.103	0.098	0.094	0.091	0.096	0.098	0.095	0.091	0.091	0.101	0.103	0.102	0.103	0.102	0.103
Peak 8-Hour Indicator	0.085	0.088	0.089	0.088	0.090	0.088	0.083	0.083	0.082	0.085	0.086	0.086	0.080	0.079	0.087	0.095	0.094	0.095	0.096	0.096
4th High 1-Hr. in 3 Yrs	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.090	0.090	0.095	0.097	0.097	0.091	0.096	0.103	0.103	0.099	0.105	0.102	0.103
Avg. of 4th High 8-Hr. in 3 Yrs	0.074	0.078	0.082	0.081	0.082	0.080	0.077	0.076	0.075	0.078	0.078	0.077	0.072	0.072	0.077	0.086	0.087	0.089	0.089	0.088
Maximum 1-Hr. Concentration	0.100	0.110	0.110	0.100	0.100	0.130	0.100	0.090	0.100	0.099	0.105	0.108	0.087	0.106	0.135	0.105	0.101	0.112	0.101	0.103
Max. 8-Hr. Concentration	0.093	0.087	0.088	0.092	0.087	0.095	0.085	0.077	0.083	0.091	0.086	0.084	0.072	0.090	0.100	0.095	0.089	0.101	0.091	0.094
Days Above State Standard	4	2	5	8	4	2	1	0	1	3	1	2	0	2	7	5	4	10	5	2
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	1	3	3	1	1	1	0	0	2	1	0	0	1	5	6	6	13	8	3

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				100	82			83	78	93	64	66	108	71	94	85	112	96	54	115
Max. 24-Hr. Concentration (Nat)				115	91	97	123	83	78	93	64	66	108	68	95	81	105	92	54	110
Annual Average (State)									28.0	33.3	27.0	25.2	25.2	22.8	31.1	27.9	29.9	28.8	21.7	28.8
Annual Average (Nat)				42.1	35.5	35.5	38.3		27.6	33.3	26.2	25.5	24.9	22.3	30.5	27.6	29.3	28.2	21.3	28.1
Calc Days Above State 24-Hr Std									46	36	37	16	21	18	49	39	31	37	6	30
Calc Days Above Nat 24-Hr Std				0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														69.0	73.0	98.0	65.0	96.1	67.0	76.3
Max. 24-Hr. Concentration (Nat)														69.0	73.0	98.0	65.0	84.0	33.0	65.0
98th Percentile of 24-Hr Conc.														69.0	60.0	70.0	56.0	53.0	32.0	54.0
Annual Average (State)															17.5	15.8		15.1	15.9	16.5
Avg. of Qtrly. Means (Nat)															17.5	15.8	13.0	15.1	10.5	15.1

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	8.6	10.1	10.2	10.7	10.1	10.4	9.8	9.8	8.9	6.2	5.8	5.9	5.5	5.3	4.4	4.5	4.6	4.1	3.5	3.1
Max. 1-Hr. Concentration	15.0	20.0	12.0	17.0	15.0	17.0	15.0	14.0	9.0	9.4	8.5	8.7	7.0	6.0	7.2	5.2	6.4	5.1	3.9	3.6
Max. 8-Hr. Concentration	9.8	10.4	8.6	12.3	10.0	10.8	9.2	6.8	5.8	5.7	4.8	6.1	5.1	4.5	5.4	4.0	4.3	3.5	2.5	2.9
Days Above State 8-Hr. Std.	2	3	0	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	2	2	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.084	0.083	0.089	0.090	0.089	0.081	0.081	0.082	0.082	0.078	0.077	0.074	0.072	0.068	0.074	0.077	0.074	0.061	0.058	0.058
Max. 1-Hr. Concentration	0.080	0.080	0.090	0.100	0.080	0.080	0.070	0.080	0.090	0.080	0.074	0.070	0.061	0.068	0.077	0.078	0.062	0.058	0.057	0.056
Max. Annual Average	0.014	0.015	0.017	0.016	0.016	0.015		0.016	0.016	0.015	0.014	0.013	0.013	0.013	0.015	0.012	0.012	0.012	0.011	0.011

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-63

Sacramento Valley Air Basin

County: Colusa

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.111	0.109	0.112					0.108	0.107	0.102	0.102	0.109	0.101	0.100	0.095	0.094	0.098	0.097	0.096	0.088
Peak 8-Hour Indicator	0.093	0.091	0.097					0.091	0.093	0.091	0.094	0.094	0.088	0.086	0.084	0.082	0.087	0.085	0.084	0.076
4th High 1-Hr. in 3 Yrs	0.100	0.110	0.110				0.090	0.100	0.100	0.100	0.101	0.102	0.098	0.099	0.094	0.094	0.095	0.095	0.095	0.089
Avg. of 4th High 8-Hr. in 3 Yrs	0.082	0.085	0.085				0.073	0.078	0.079	0.082	0.082	0.082	0.077	0.077	0.076	0.075	0.077	0.076	0.075	0.069
Maximum 1-Hr. Concentration	0.110	0.110	0.120				0.100	0.110	0.100	0.107	0.106	0.111	0.093	0.099	0.095	0.092	0.101	0.094	0.089	0.084
Max. 8-Hr. Concentration	0.091	0.088	0.102				0.084	0.092	0.085	0.090	0.090	0.091	0.081	0.088	0.085	0.072	0.088	0.081	0.071	0.073
Days Above State Standard	7	12	28				1	8	3	4	6	6	0	2	1	0	5	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	4	5	21				0	3	2	2	2	4	0	1	1	0	3	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				98	72	93	102	84	70	57	93	57	57	59	172	55	76	64	69	125
Max. 24-Hr. Concentration (Nat)				98	72	93	102	84	70	57	93	57	57	58	171	55	74	62	68	126
Annual Average (State)					29.8	31.3		29.9	25.0	28.9			25.1	20.0			25.2			43.2
Annual Average (Nat)				33.5	29.8	30.9		28.7	24.5	28.1	29.9	26.8	24.6	19.5			24.5		23.8	42.6
Calc Days Above State 24-Hr Std					35	35		42	20	26			12	6			7			109
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														37.0	55.0	28.0	36.0	57.0	30.0	44.6
Max. 24-Hr. Concentration (Nat)														37.0	55.0	28.0	36.0	57.0	30.0	38.0
98th Percentile of 24-Hr Conc.																26.0	31.0		27.0	34.0
Annual Average (State)																	9.6			7.3
Avg. of Qtrly. Means (Nat)																8.0	9.6		8.0	7.3

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-64

Sacramento Valley Air Basin

County: Glenn

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.107	0.101	0.108			0.102	0.104	0.101	0.103	0.101	0.098	0.098	0.097	0.094	0.098	0.096	0.096	0.092	0.091	0.088
Peak 8-Hour Indicator	0.091	0.088	0.092			0.088	0.090	0.090	0.090	0.089	0.086	0.085	0.084	0.082	0.087	0.085	0.086	0.080	0.080	0.076
4th High 1-Hr. in 3 Yrs	0.110	0.100	0.110			0.090	0.100	0.100	0.100	0.100	0.096	0.098	0.092	0.095	0.097	0.097	0.096	0.088	0.088	0.087
Avg. of 4th High 8-Hr. in 3 Yrs	0.080	0.080	0.084			0.080	0.078	0.081	0.080	0.081	0.080	0.079	0.077	0.076	0.078	0.077	0.077	0.074	0.073	0.070
Maximum 1-Hr. Concentration	0.110	0.100	0.120			0.100	0.100	0.110	0.100	0.099	0.103	0.098	0.096	0.098	0.101	0.086	0.094	0.093	0.090	0.084
Max. 8-Hr. Concentration	0.090	0.083	0.097			0.086	0.082	0.088	0.083	0.086	0.087	0.081	0.080	0.088	0.093	0.078	0.084	0.077	0.079	0.070
Days Above State Standard	5	2	9			3	1	6	1	3	1	1	1	2	4	0	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	3	0	8			1	0	4	0	2	1	0	0	1	2	0	0	0	0	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				93	73	63	81	111	75	80	88	75	72	55	88	65	68	80	61	138
Max. 24-Hr. Concentration (Nat)				93	73	63	81	111	75	80	88	75	72	53	88	65	68	77	61	135
Annual Average (State)					27.1	28.8	33.0	28.9	23.1		29.0	24.5	22.8	20.3		23.4		29.1	20.4	25.6
Annual Average (Nat)				35.1	27.1	28.0	32.3	28.4	23.1		27.6	24.7	22.4		26.1	22.2		28.6	20.1	25.2
Calc Days Above State 24-Hr Std					18	23	83	46	16		57	29	10	12		6		41	18	24
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				54.2
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-65

Sacramento Valley Air Basin

County: Placer

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.153	0.153	0.149	0.153	0.148	0.150	0.138	0.145	0.138	0.137	0.135	0.139	0.134	0.138	0.129	0.134	0.124	0.130	0.128	0.124
Peak 8-Hour Indicator	0.125	0.120	0.121	0.121	0.121	0.122	0.120	0.121	0.116	0.116	0.118	0.116	0.111	0.111	0.111	0.115	0.112	0.113	0.111	0.106
4th High 1-Hr. in 3 Yrs	0.160	0.160	0.150	0.160	0.150	0.150	0.140	0.140	0.140	0.140	0.134	0.131	0.131	0.131	0.132	0.132	0.127	0.124	0.124	0.124
Avg. of 4th High 8-Hr. in 3 Yrs	0.111	0.109	0.105	0.108	0.105	0.107	0.105	0.105	0.103	0.103	0.105	0.103	0.095	0.095	0.097	0.102	0.101	0.101	0.099	0.095
Maximum 1-Hr. Concentration	0.180	0.170	0.180	0.180	0.120	0.150	0.130	0.170	0.150	0.133	0.148	0.135	0.113	0.153	0.142	0.128	0.128	0.136	0.133	0.118
Max. 8-Hr. Concentration	0.127	0.123	0.121	0.120	0.097	0.127	0.115	0.122	0.120	0.117	0.119	0.110	0.096	0.119	0.113	0.107	0.107	0.115	0.111	0.101
Days Above State Standard	35	45	41	55	23	42	36	46	23	35	35	33	10	23	28	25	32	25	17	15
Days Above Nat. 1-Hr. Std.	8	4	7	13	0	11	4	8	4	5	3	3	0	7	3	1	1	4	1	0
Days Above Nat. 8-Hr. Std.	25	36	37	43	13	41	29	34	17	27	21	26	4	20	27	19	26	16	12	12

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)							55	48	52	65	84	98	66	75	89	62	62	61	59	43
Max. 24-Hr. Concentration (Nat)				70	67	58	68	48	52	65	84	98	66	70	89	58	59	58	58	43
Annual Average (State)									21.4	25.3	24.1	20.9	22.1	23.0	26.7	24.5	24.7	25.2	21.3	22.1
Annual Average (Nat)				31.4	28.7				24.3	25.0	23.4	23.6	21.8	22.3	26.1	23.9	24.2	24.6	21.0	21.6
Calc Days Above State 24-Hr Std									0	16	7	0	0	18	31	11	24	6	6	0
Calc Days Above Nat 24-Hr Std				0	0				0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														63.0	79.0	51.0	49.0	53.0	30.0	47.8
Max. 24-Hr. Concentration (Nat)														63.0	79.0	51.0	49.0	53.0	30.0	32.0
98th Percentile of 24-Hr Conc.															40.0	43.0	49.0	40.0	26.0	30.0
Annual Average (State)															13.4	12.2	11.9	13.2	9.9	9.4
Avg. of Qtrly. Means (Nat)															13.4	12.2	11.9	13.2	9.9	9.4

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator								2.3	2.6	2.9	2.6	2.5	2.2	2.3	2.3	2.4	2.3	2.2	2.0	1.8
Max. 1-Hr. Concentration							4.0	9.0	6.0	4.7	3.9	4.5	3.7	4.2	3.9	3.2	3.1	4.6	2.4	2.6
Max. 8-Hr. Concentration							3.3	2.3	2.8	3.0	2.2	2.8	2.2	2.4	2.2	2.4	1.9	2.8	1.6	1.9
Days Above State 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator								0.090	0.088	0.090	0.096	0.098	0.095	0.091	0.092	0.091	0.090	0.085	0.087	0.086
Max. 1-Hr. Concentration							0.050	0.080	0.090	0.089	0.093	0.100	0.080	0.097	0.093	0.082	0.086	0.075	0.083	0.067
Max. Annual Average								0.015	0.016	0.018	0.017	0.016	0.015	0.016	0.012	0.016	0.015	0.016	0.014	0.013

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-66

Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento Valley Air Basin

County: Sacramento

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.173	0.173	0.168	0.171	0.166	0.162	0.153	0.158	0.159	0.148	0.149	0.154	0.141	0.161	0.155	0.153	0.138	0.135	0.137	0.134
Peak 8-Hour Indicator	0.131	0.133	0.129	0.129	0.128	0.126	0.122	0.124	0.125	0.116	0.120	0.124	0.117	0.125	0.124	0.118	0.111	0.110	0.111	0.113
4th High 1-Hr. in 3 Yrs	0.180	0.180	0.160	0.160	0.160	0.160	0.150	0.150	0.150	0.143	0.145	0.145	0.133	0.148	0.148	0.148	0.133	0.132	0.138	0.138
Avg. of 4th High 8-Hr. in 3 Yrs	0.118	0.118	0.114	0.114	0.114	0.101	0.100	0.101	0.110	0.104	0.106	0.106	0.097	0.097	0.101	0.105	0.099	0.100	0.100	0.097
Maximum 1-Hr. Concentration	0.200	0.160	0.170	0.170	0.170	0.150	0.190	0.150	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.114
Max. 8-Hr. Concentration	0.161	0.125	0.127	0.130	0.133	0.108	0.140	0.122	0.118	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.094
Days Above State Standard	48	48	74	86	61	29	55	52	26	36	39	49	21	42	40	31	31	39	40	20
Days Above Nat. 1-Hr. Std.	18	22	17	30	8	8	12	9	6	6	10	7	3	13	5	4	2	3	5	0
Days Above Nat. 8-Hr. Std.	32	36	53	58	32	20	45	35	14	24	32	29	9	29	26	26	23	28	30	12

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				99	147	153	134	89	113	99	90	86	108	114	141	90	96	91	123	87
Max. 24-Hr. Concentration (Nat)				99	139	153	134	89	110	99	90	86	108	104	141	86	89	85	75	58
Annual Average (State)					41.9			31.2	29.4	29.1	28.0	25.6	23.5	23.3	29.7	25.9		27.6	28.8	25.4
Annual Average (Nat)				40.4	41.9	41.7	42.3	31.1	28.5	30.2	28.8	24.9	23.2	27.0	33.1	26.7	23.1	29.0	28.4	24.6
Calc Days Above State 24-Hr Std					82			34	43	23	42	24	12	18	49	36		30	25	6
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														96.0	108.0	123.1	128.2	91.0	73.2	58.2
Max. 24-Hr. Concentration (Nat)														96.0	108.0	81.0	78.0	91.0	65.0	51.0
98th Percentile of 24-Hr Conc.														96.0	84.0	81.0	78.0	77.0	43.0	42.0
Annual Average (State)																12.3			12.2	11.5
Avg. of Qtrly. Means (Nat)															17.0	12.3		14.3	12.2	11.5

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.2	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2
Max. 1-Hr. Concentration	17.0	20.0	15.0	15.0	18.0	16.0	15.0	12.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	6.7	7.8	8.5	7.3
Max. 8-Hr. Concentration	13.3	13.9	10.0	11.6	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1
Days Above State 8-Hr. Std.	12	12	5	11	22	14	8	0	2	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	12	11	3	8	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.109	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.094	0.086	0.107	0.097	0.095	0.084	0.089	0.091
Max. 1-Hr. Concentration	0.130	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.102	0.090	0.102	0.146
Max. Annual Average	0.021	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.015	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.03		0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.00	0.00		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01		0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00

Table A-67

Sacramento Valley Air Basin

County: Shasta

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.115	0.115	0.121	0.122	0.119	0.129	0.119	0.117	0.111	0.111	0.105	0.114	0.118	0.127	0.126	0.125	0.110	0.100	0.118	0.112
Peak 8-Hour Indicator	0.106	0.102	0.105	0.106	0.104	0.107	0.103	0.102	0.098	0.100	0.097	0.102	0.100	0.111	0.110	0.110	0.097	0.088	0.099	0.095
4th High 1-Hr. in 3 Yrs	0.100	0.110	0.120	0.120	0.120	0.110	0.110	0.110	0.110	0.110	0.101	0.110	0.110	0.120	0.120	0.120	0.111	0.098	0.107	0.107
Avg. of 4th High 8-Hr. in 3 Yrs	0.077	0.080	0.091	0.088	0.085	0.093	0.091	0.090	0.083	0.084	0.080	0.087	0.086	0.095	0.095	0.093	0.082	0.078	0.075	0.087
Maximum 1-Hr. Concentration	0.120	0.120	0.130	0.120	0.090	0.130	0.110	0.110	0.110	0.113	0.099	0.110	0.119	0.140	0.116	0.102	0.087	0.098	0.114	0.131
Max. 8-Hr. Concentration	0.105	0.097	0.108	0.105	0.083	0.110	0.095	0.091	0.088	0.105	0.084	0.100	0.107	0.126	0.098	0.087	0.079	0.084	0.096	0.096
Days Above State Standard	10	8	25	5	0	13	12	10	1	7	3	16	8	40	23	3	0	4	9	3
Days Above Nat. 1-Hr. Std.	0	0	2	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	1
Days Above Nat. 8-Hr. Std.	9	9	21	3	0	13	11	10	1	8	0	14	6	45	12	1	0	0	6	2

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				60	91	80	83	86	91	64	55	51	63	52	75	53	71	58	52	74
Max. 24-Hr. Concentration (Nat)				60	91	80	83	86	91	64	55	51	63	61	81	49	66	60	53	76
Annual Average (State)							28.7		20.1	24.4	25.1	24.3				24.3	24.1	20.8	21.7	23.6
Annual Average (Nat)				26.4		24.9	28.7		20.1	24.4	25.2	24.3	22.2	23.5		23.7	23.7	25.9	21.5	23.5
Calc Days Above State 24-Hr Std							50		7	12	13	6				6	6	6	12	6
Calc Days Above Nat 24-Hr Std				0		0	0		0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														50.0	57.0	45.0	49.0	40.0	34.0	26.0
Max. 24-Hr. Concentration (Nat)														50.0	57.0	45.0	49.0	40.0	34.0	26.0
98th Percentile of 24-Hr Conc.															55.0		29.0	38.0	16.0	18.0
Annual Average (State)															12.9		9.2		7.5	
Avg. of Qtrly. Means (Nat)															12.9		9.2	10.5	7.5	7.2

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	1.1	3.1	3.1		2.4	2.3	2.3	2.7	2.0	2.0										
Max. 1-Hr. Concentration	2.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	4.5										
Max. 8-Hr. Concentration	1.1	2.8	2.5	1.8	2.5	2.3	2.0	1.9	2.1	1.7										
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0										
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0										

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator		0.091	0.093	0.093	0.090	0.081	0.069	0.069												
Max. 1-Hr. Concentration	0.020	0.090	0.100	0.100	0.080	0.070	0.070	0.050												
Max. Annual Average			0.015				0.012													

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-68

Sacramento Valley Air Basin

County: Solano

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.081	0.093	0.112	0.108	0.112	0.104					0.114	0.113	0.113	0.117	0.121	0.120	0.112	0.101	0.102	0.097
Peak 8-Hour Indicator	0.059	0.073	0.093	0.095	0.096	0.092					0.090	0.092	0.090	0.098	0.103	0.102	0.093	0.083	0.084	0.084
4th High 1-Hr. in 3 Yrs	0.080	0.090	0.110	0.110	0.120	0.100					0.102	0.106	0.106	0.123	0.123	0.123	0.110	0.100	0.094	0.090
Avg. of 4th High 8-Hr. in 3 Yrs	0.047	0.055	0.066	0.079	0.082	0.075					0.079	0.079	0.076	0.082	0.085	0.085	0.077	0.072	0.072	0.071
Maximum 1-Hr. Concentration	0.070	0.090	0.120	0.100	0.120	0.110					0.115	0.126	0.105	0.137	0.140	0.100	0.104	0.100	0.095	0.102
Max. 8-Hr. Concentration	0.052	0.066	0.102	0.088	0.101	0.088					0.090	0.101	0.083	0.101	0.106	0.081	0.081	0.077	0.081	0.087
Days Above State Standard	0	0	12	2	4	1					6	8	3	10	8	2	2	1	0	1
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0					0	1	0	2	1	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	8	2	1	1					3	2	0	7	8	0	0	0	0	1

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				81	109	96	98	70	53	76	62	45	74	62	68	50	82	66	42	44
Max. 24-Hr. Concentration (Nat)				81	109	96	98	70	53	76	62	45	74	56	66	47	77	63	40	44
Annual Average (State)								24.4		21.2	18.9	17.3	16.1	17.7	20.5	19.0	20.8	19.9	16.0	18.7
Annual Average (Nat)								24.4	22.4	21.2	19.0	17.3	16.1	17.2	19.8	18.3	20.2	19.4	15.7	18.2
Calc Days Above State 24-Hr Std								24		18	13	0	6	6	18	0	12	6	0	0
Calc Days Above Nat 24-Hr Std								0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration				4.0																
Max. 8-Hr. Concentration				1.8																
Days Above State 8-Hr. Std.				0																
Days Above Nat. 8-Hr. Std.				0																

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-69

A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sacramento Valley Air Basin

County: Sutter

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.125	0.125	0.120	0.128	0.123	0.121	0.106	0.111	0.125	0.121	0.120	0.115	0.114	0.120	0.116	0.115	0.107	0.113	0.121	0.119
Peak 8-Hour Indicator	0.104	0.105	0.102	0.103	0.103	0.096	0.091	0.098	0.109	0.105	0.107	0.104	0.102	0.102	0.100	0.099	0.097	0.100	0.104	0.103
4th High 1-Hr. in 3 Yrs	0.120	0.120	0.120	0.130	0.120	0.120	0.100	0.110	0.110	0.113	0.113	0.113	0.107	0.116	0.116	0.116	0.106	0.109	0.113	0.113
Avg. of 4th High 8-Hr. in 3 Yrs	0.089	0.092	0.093	0.095	0.091	0.082	0.076	0.082	0.097	0.096	0.096	0.096	0.091	0.091	0.089	0.089	0.083	0.084	0.088	0.090
Maximum 1-Hr. Concentration	0.120	0.140	0.140	0.150	0.100	0.110	0.110	0.120	0.140	0.115	0.126	0.116	0.105	0.124	0.115	0.108	0.116	0.117	0.117	0.100
Max. 8-Hr. Concentration	0.097	0.103	0.107	0.103	0.087	0.083	0.095	0.108	0.108	0.100	0.103	0.102	0.092	0.102	0.097	0.092	0.093	0.103	0.099	0.089
Days Above State Standard	18	21	23	41	4	2	10	29	13	25	21	28	5	16	21	9	6	15	10	2
Days Above Nat. 1-Hr. Std.	0	2	1	2	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	10	12	16	32	2	0	2	13	9	18	17	28	3	14	11	5	3	11	6	1

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)					103	96	108	79	78	154	128	82	98	63	151	70	82	75	83	106
Max. 24-Hr. Concentration (Nat)				109	103	96	108	79	78	154	128	82	98	60	150	70	80	74	81	105
Annual Average (State)						38.5	39.2	35.2	31.2			29.9	28.8	24.5	39.4		30.5	31.8	26.4	42.6
Annual Average (Nat)				37.4		38.5	38.5	34.3	30.7	34.5		29.8	28.6	23.8	38.4	27.9	30.2	30.9	26.0	42.0
Calc Days Above State 24-Hr Std						74	104	61	43			27	22	30	62		50	25	31	97
Calc Days Above Nat 24-Hr Std				0		0	0	0	0	0		0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)														69.0	58.0	44.0	56.0	62.0	32.0	41.0
Max. 24-Hr. Concentration (Nat)														69.0	58.0	44.0	56.0	62.0	32.0	39.0
98th Percentile of 24-Hr Conc.														69.0	53.0	38.0	54.0	35.0	29.0	38.0
Annual Average (State)															15.9	11.2	11.9	13.1	9.4	10.1
Avg. of Qtrly. Means (Nat)																10.6	11.9		9.4	10.1

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator							10.2	8.1	5.8	5.7	5.2	4.8	4.6	4.4	4.4	4.4	4.6	4.2	3.6	3.1
Max. 1-Hr. Concentration							12.0	9.0	10.0	8.8	7.5	7.7	6.1	7.3	7.2	6.1	17.2	6.4	4.3	5.8
Max. 8-Hr. Concentration							8.5	6.3	7.3	6.1	4.7	4.7	4.1	4.9	4.4	3.6	3.9	3.5	2.4	2.5
Days Above State 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.							0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator							0.108	0.089	0.088	0.086	0.083	0.079	0.077	0.075	0.081	0.079	0.082	0.075	0.078	0.075
Max. 1-Hr. Concentration							0.100	0.090	0.090	0.075	0.074	0.068	0.073	0.074	0.085	0.072	0.079	0.068	0.080	0.066
Max. Annual Average								0.017	0.017	0.016	0.013	0.012	0.014	0.013	0.014			0.015	0.014	0.012

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-70

Sacramento Valley Air Basin

County: Tehama

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator						0.119	0.115	0.113	0.107	0.104	0.108	0.102	0.099	0.109	0.115	0.115	0.111	0.098	0.100	0.116
Peak 8-Hour Indicator						0.106	0.099	0.096	0.093	0.093	0.096	0.090	0.089	0.097	0.104	0.105	0.102	0.091	0.091	0.099
4th High 1-Hr. in 3 Yrs						0.110	0.110	0.110	0.100	0.100	0.100	0.098	0.099	0.120	0.120	0.120	0.109	0.096	0.100	0.100
Avg. of 4th High 8-Hr. in 3 Yrs						0.095	0.089	0.089	0.086	0.086	0.086	0.084	0.083	0.086	0.091	0.091	0.086	0.083	0.084	0.085
Maximum 1-Hr. Concentration						0.120	0.110	0.100	0.100	0.100	0.110	0.108	0.101	0.120	0.128	0.096	0.094	0.109	0.103	0.097
Max. 8-Hr. Concentration						0.100	0.085	0.091	0.093	0.087	0.103	0.084	0.093	0.112	0.108	0.088	0.085	0.095	0.088	0.089
Days Above State Standard						15	6	9	5	2	10	4	2	12	18	2	0	7	6	2
Days Above Nat. 1-Hr. Std.						0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Days Above Nat. 8-Hr. Std.						11	2	9	4	3	9	0	2	11	20	2	1	7	3	2

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				99	68	67	85	75	67	74	63	56	58	118	99	49	73	71	58	57
Max. 24-Hr. Concentration (Nat)				99	68	67	85	75	67	74	63	56	58	119	98	49	71	69	58	57
Annual Average (State)					31.4	29.7	32.4	29.3	24.9											25.0
Annual Average (Nat)				42.8	31.4	29.7	32.5	29.3	25.0	30.0			22.5			23.6	26.2	30.5	22.6	24.5
Calc Days Above State 24-Hr Std					42	24	67	30	18											12
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0			0			0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-71

Sacramento Valley Air Basin

County: Yolo

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.124	0.120	0.125	0.124	0.119	0.115	0.113	0.112	0.110	0.106	0.107	0.109	0.111	0.120	0.115	0.115	0.112	0.107	0.104	0.104
Peak 8-Hour Indicator	0.099	0.099	0.100	0.102	0.102	0.098	0.094	0.096	0.093	0.091	0.089	0.092	0.092	0.098	0.096	0.096	0.093	0.092	0.092	0.090
4th High 1-Hr. in 3 Yrs	0.120	0.130	0.140	0.130	0.120	0.120	0.100	0.110	0.110	0.110	0.103	0.108	0.108	0.110	0.110	0.110	0.105	0.101	0.101	0.100
Avg. of 4th High 8-Hr. in 3 Yrs	0.086	0.086	0.087	0.087	0.085	0.080	0.077	0.086	0.080	0.079	0.078	0.082	0.079	0.087	0.086	0.085	0.082	0.083	0.083	0.079
Maximum 1-Hr. Concentration	0.140	0.140	0.140	0.120	0.100	0.140	0.100	0.120	0.130	0.100	0.114	0.122	0.104	0.115	0.117	0.103	0.103	0.121	0.098	0.097
Max. 8-Hr. Concentration	0.097	0.100	0.127	0.097	0.083	0.105	0.091	0.096	0.097	0.082	0.091	0.104	0.086	0.102	0.094	0.089	0.093	0.091	0.084	0.075
Days Above State Standard	13	12	25	32	3	9	4	14	1	4	9	13	2	10	10	7	6	10	4	1
Days Above Nat. 1-Hr. Std.	1	2	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	6	4	13	12	0	6	1	7	1	0	4	4	1	5	6	2	2	5	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)						147	136	106	96	98	145	77	126	130	179	85	101	87	70	171
Max. 24-Hr. Concentration (Nat)				96	113	147	136	106	96	98	145	77	126	130	179	79	95	82	69	169
Annual Average (State)								34.7	30.5		29.9	27.5	27.7	29.9	33.3	26.6	28.2	28.0		35.2
Annual Average (Nat)				40.5		31.3		34.7	31.8	29.8	30.1	27.5	27.6	29.0	32.5	25.7	27.4	27.2	23.4	34.5
Calc Days Above State 24-Hr Std								70	63		43	44	12	60	64	43	30	37		80
Calc Days Above Nat 24-Hr Std				0		0		0	0	0	0	0	0	0	7	0	0	0	0	6

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															70.0	46.0	57.0	69.0	41.7	49.5
Max. 24-Hr. Concentration (Nat)															70.0	46.0	57.0	69.0	31.0	36.0
98th Percentile of 24-Hr Conc.																38.0		31.0	28.0	31.0
Annual Average (State)																10.3			8.4	10.4
Avg. of Qtrly. Means (Nat)															16.3	10.3		10.7	8.4	10.4

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	3.6	4.4	4.6	4.6	4.6	4.9	5.2	3.8	3.8			1.4	1.7	1.5	1.4	1.2	1.2	1.3	1.1	1.1
Max. 1-Hr. Concentration	12.0	13.0	14.0	9.0	13.0	12.0	7.0	7.0	6.0	10.0	5.3	2.4	2.8	2.5	2.4	2.5	15.1	1.9	3.3	1.6
Max. 8-Hr. Concentration	4.9	6.0	8.4	4.9	5.4	5.0	3.5	3.9	3.4	6.6	3.1	1.8	1.8	1.1	1.4	1.3	2.5	1.4	0.8	1.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator												0.064	0.061	0.064	0.069	0.069	0.082	0.075	0.076	0.060
Max. 1-Hr. Concentration												0.061	0.057	0.060	0.073	0.053	0.172	0.059	0.060	0.057
Max. Annual Average													0.010	0.011	0.012	0.011	0.010	0.012	0.011	0.009

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-72

Sacramento Valley Air Basin

County: Yuba

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator																				
Peak 8-Hour Indicator																				
4th High 1-Hr. in 3 Yrs																				
Avg. of 4th High 8-Hr. in 3 Yrs																				
Maximum 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State Standard																				
Days Above Nat. 1-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				96	113	80	102													
Max. 24-Hr. Concentration (Nat)				96	113	80	102													
Annual Average (State)						31.1														
Annual Average (Nat)						31.3														
Calc Days Above State 24-Hr Std						43														
Calc Days Above Nat 24-Hr Std						0														

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. Annual Average																				

No Monitoring Data Available

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-73

Salton Sea Air Basin

County: Imperial

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.122	0.134	0.092	0.110	0.110	0.117	0.108	0.150	0.156	0.154	0.163	0.155	0.156	0.145	0.147	0.149	0.152	0.142	0.130	0.119
Peak 8-Hour Indicator	0.097	0.105	0.075	0.086	0.088	0.090	0.084	0.111	0.114	0.114	0.116	0.115	0.114	0.111	0.109	0.099	0.104	0.100	0.097	0.094
4th High 1-Hr. in 3 Yrs	0.120	0.120	0.090	0.110	0.110	0.110	0.120	0.150	0.150	0.150	0.180	0.180	0.160	0.140	0.142	0.157	0.166	0.147	0.142	0.121
Avg. of 4th High 8-Hr. in 3 Yrs	0.067	0.071	0.069	0.073	0.075	0.076	0.078	0.090	0.095	0.104	0.105	0.103	0.103	0.093	0.092	0.089	0.092	0.090	0.087	0.085
Maximum 1-Hr. Concentration	0.130	0.090	0.090	0.120	0.110	0.110	0.180	0.150	0.210	0.180	0.232	0.180	0.160	0.236	0.171	0.169	0.167	0.156	0.144	0.124
Max. 8-Hr. Concentration	0.102	0.080	0.081	0.098	0.088	0.082	0.135	0.117	0.128	0.116	0.116	0.117	0.120	0.104	0.110	0.113	0.112	0.104	0.097	0.090
Days Above State Standard	16	0	0	17	4	6	9	46	50	75	83	69	69	44	65	20	41	29	23	10
Days Above Nat. 1-Hr. Std.	1	0	0	0	0	0	3	8	16	8	22	10	10	5	24	5	10	3	3	0
Days Above Nat. 8-Hr. Std.	10	0	0	3	1	0	3	24	24	47	49	34	50	18	20	5	18	13	8	1

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				368	676	258	243	103	175	258	229	359	532	181	238	279	634	361	848	364
Max. 24-Hr. Concentration (Nat)				368	676	258	243	103	175	258	229	359	532	176	227	268	647	373	840	354
Annual Average (State)					77.9	57.0	57.0	47.5	52.6		72.0	73.6	77.7	66.6	79.0	84.8	87.1	80.9	79.7	60.3
Annual Average (Nat)				60.4	77.9	57.3	57.9	47.5	53.3	44.8	71.9	73.6	77.7	66.1	77.8	95.2	86.2	79.9	80.0	60.8
Calc Days Above State 24-Hr Std					221	197	182	143	144		218	244	294	227	289	313	312	305	284	220
Calc Days Above Nat 24-Hr Std				7	27	12	7	0	13	0	13	30	12	12	32	38	18	18	25	14

** PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															52.5	84.2	60.2	142.7	153.6	76.0
Max. 24-Hr. Concentration (Nat)															52.5	84.2	60.2	46.5	65.1	74.2
98th Percentile of 24-Hr Conc.															39.5	56.0		44.1	21.0	31.9
Annual Average (State)																		15.1		16.1
Avg. of Qtrly. Means (Nat)															15.2	16.9		15.1	9.2	11.8

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator										17.4	18.8	17.8	17.4	15.5	15.5	14.8	14.3	12.8	11.5	10.5
Max. 1-Hr. Concentration										30.6	32.0	27.0	24.0	23.5	22.9	19.9	17.4	15.6	11.8	12.6
Max. 8-Hr. Concentration										13.1	22.9	22.1	17.8	14.4	17.9	15.5	12.3	11.6	8.8	10.3
Days Above State 8-Hr. Std.										10	17	11	15	12	13	8	6	4	0	1
Days Above Nat. 8-Hr. Std.										9	15	9	10	8	11	6	6	3	0	1

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator										0.153	0.182	0.178	0.178	0.150	0.145	0.170	0.161	0.153	0.147	0.128
Max. 1-Hr. Concentration										0.227	0.217	0.164	0.128	0.257	0.286	0.192	0.139	0.138	0.189	0.108
Max. Annual Average											0.016	0.014			0.018			0.013	0.013	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator												0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.00	0.00
Max. Annual Average										0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration										0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00

Table A-74

Salton Sea Air Basin

County: Riverside

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.204	0.197	0.185	0.182	0.180	0.181	0.175	0.168	0.159	0.153	0.153	0.154	0.152	0.153	0.143	0.138	0.130	0.134	0.135	0.131
Peak 8-Hour Indicator	0.154	0.153	0.148	0.141	0.142	0.139	0.139	0.133	0.131	0.127	0.125	0.122	0.120	0.122	0.114	0.112	0.110	0.118	0.119	0.116
4th High 1-Hr. in 3 Yrs	0.190	0.190	0.180	0.180	0.180	0.180	0.180	0.170	0.170	0.152	0.158	0.158	0.152	0.155	0.143	0.133	0.128	0.132	0.133	0.131
Avg. of 4th High 8-Hr. in 3 Yrs	0.134	0.135	0.131	0.130	0.129	0.126	0.125	0.121	0.118	0.113	0.110	0.111	0.107	0.107	0.100	0.099	0.100	0.105	0.108	0.104
Maximum 1-Hr. Concentration	0.240	0.180	0.170	0.200	0.190	0.170	0.180	0.170	0.170	0.165	0.160	0.160	0.155	0.173	0.126	0.124	0.137	0.136	0.141	0.125
Max. 8-Hr. Concentration	0.160	0.142	0.141	0.137	0.160	0.130	0.148	0.128	0.126	0.130	0.132	0.125	0.117	0.136	0.107	0.104	0.113	0.124	0.11	0.106
Days Above State Standard	93	80	85	99	117	82	80	82	82	78	56	61	45	42	33	43	56	54	60	46
Days Above Nat. 1-Hr. Std.	28	31	40	35	38	27	24	24	21	13	11	12	4	8	1	0	6	2	4	1
Days Above Nat. 8-Hr. Std.	68	62	72	70	90	56	62	66	64	39	34	52	26	31	23	30	43	50	46	37

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				115	712	520	340	175	125	97	199	215	182	158	119	201	604	276	302	161
Max. 24-Hr. Concentration (Nat)				115	712	520	340	175	125	97	199	215	182	158	119	201	604	276	309	161
Annual Average (State)					44.6	80.3	69.1	43.8	46.4	48.3	52.0	55.2		48.4	28.9	55.4	59.0	53.9	56.1	40.6
Annual Average (Nat)				47.6	89.9	80.3	69.3	43.1	46.5	48.3	52.3	55.6	53.9	48.1	52.7	55.2	59.5	53.8	56.7	40.2
Calc Days Above State 24-Hr Std					104	254	230	115	151	136	162	189		146	19	183	171	174	158	74
Calc Days Above Nat 24-Hr Std				0	26	26	19	6	0	0	7	13	13	3	0	9	18	9	9	3

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															29.6	28.6	44.7	42.3	26.8	28.5
Max. 24-Hr. Concentration (Nat)															29.6	28.6	44.7	42.3	26.8	28.5
98th Percentile of 24-Hr Conc.																26.2	33.0	23.3	24.9	23.3
Annual Average (State)																11.2		10.0	11.4	9.7
Avg. of Qtrly. Means (Nat)																11.2	12.2	11.9	11.4	10.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	2.5	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	1.9	1.7	1.6	1.5	1.5	1.6	1.7	1.7	1.6	1.4	1.1
Max. 1-Hr. Concentration	5.0	5.0	5.0	4.0	6.0	5.0	5.0	5.0	6.0	3.9	3.3	3.2	2.7	3.1	2.9	2.7	2.2	1.9	3.3	2.1
Max. 8-Hr. Concentration	2.6	3.6	2.9	2.1	2.9	2.3	2.5	2.4	2.0	2.0	1.5	1.6	1.3	1.7	1.8	1.6	1.6	1.1	1.3	0.8
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.124	0.085	0.083	0.084	0.089	0.092	0.091	0.088	0.088	0.088	0.088	0.084	0.082	0.077	0.075	0.073	0.071	0.069	0.070	0.069
Max. 1-Hr. Concentration	0.080	0.080	0.080	0.110	0.090	0.090	0.090	0.090	0.090	0.080	0.082	0.080	0.069	0.070	0.068	0.064	0.081	0.068	0.067	0.066
Max. Annual Average	0.020		0.019	0.022	0.024	0.021	0.021		0.019	0.021	0.021	0.020		0.016	0.018	0.016	0.017	0.016	0.016	0.013

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-75

Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin

County: San Diego

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.188	0.179	0.179	0.179	0.186	0.180	0.172	0.164	0.150	0.147	0.148	0.142	0.132	0.134	0.134	0.132	0.117	0.117	0.117	0.112
Peak 8-Hour Indicator	0.145	0.140	0.136	0.130	0.135	0.139	0.135	0.129	0.122	0.118	0.121	0.117	0.113	0.114	0.112	0.112	0.101	0.103	0.101	0.098
4th High 1-Hr. in 3 Yrs	0.210	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.138	0.135	0.135	0.131	0.118	0.118	0.118	0.115
Avg. of 4th High 8-Hr. in 3 Yrs	0.132	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089
Maximum 1-Hr. Concentration	0.220	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129
Max. 8-Hr. Concentration	0.168	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095
Days Above State Standard	148	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12
Days Above Nat. 1-Hr. Std.	50	42	40	45	56	39	27	19	14	9	12	2	1	9	0	0	2	0	1	1
Days Above Nat. 8-Hr. Std.	109	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				80	90	115	81	67	159	129	121	93	125	57	119	136	106	131	289	138
Max. 24-Hr. Concentration (Nat)				81	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137
Annual Average (State)					44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	26.5	50.9	44.5	47.4	52.4	52.6	51.7
Annual Average (Nat)				40.0	43.8	37.6	40.6	35.9	45.9	50.7	46.8	30.0	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2
Calc Days Above State 24-Hr Std					114	38	84	12	134	134	122	12	125	6	124	109	129	173	151	175
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	6	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															64.3	66.3	60.0	53.6	239.2	67.3
Max. 24-Hr. Concentration (Nat)															64.3	66.3	60.0	53.6	239.2	67.3
98th Percentile of 24-Hr Conc.															35.7	32.5	40.8	36.0	46.9	37.4
Annual Average (State)																		15.5	14.4	14.1
Avg. of Qtrly. Means (Nat)															18.0	15.8	17.7	16.0	15.5	14.1

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	10.6	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6
Max. 1-Hr. Concentration	17.0	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9
Max. 8-Hr. Concentration	13.0	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1
Days Above State 8-Hr. Std.	5	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Days Above Nat. 8-Hr. Std.	3	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.193	0.193	0.203	0.215	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119
Max. 1-Hr. Concentration	0.210	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125
Max. Annual Average	0.032	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.08	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03
Max. Annual Average	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Max. 24-Hr. Concentration	0.02	0.03	0.04	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02

Table A-76

San Francisco Bay Area Air Basin

County: Alameda

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.157	0.148	0.141	0.143	0.138	0.136	0.129	0.130	0.126	0.118	0.135	0.151	0.149	0.151	0.144	0.143	0.122	0.126	0.129	0.126
Peak 8-Hour Indicator	0.114	0.110	0.106	0.104	0.106	0.102	0.098	0.096	0.094	0.091	0.103	0.112	0.110	0.110	0.107	0.109	0.092	0.096	0.098	0.095
4th High 1-Hr. in 3 Yrs	0.160	0.150	0.140	0.140	0.140	0.130	0.130	0.120	0.120	0.120	0.138	0.138	0.138	0.138	0.139	0.139	0.113	0.124	0.123	0.123
Avg. of 4th High 8-Hr. in 3 Yrs	0.096	0.093	0.089	0.087	0.089	0.087	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.078	0.081	0.084	0.083
Maximum 1-Hr. Concentration	0.150	0.140	0.160	0.150	0.140	0.130	0.140	0.130	0.130	0.129	0.155	0.138	0.114	0.146	0.146	0.152	0.113	0.160	0.128	0.113
Max. 8-Hr. Concentration	0.106	0.106	0.116	0.096	0.101	0.105	0.092	0.091	0.102	0.092	0.115	0.112	0.084	0.110	0.116	0.114	0.089	0.106	0.094	0.080
Days Above State Standard	27	22	21	27	14	9	19	16	8	7	21	23	6	22	15	9	9	11	11	6
Days Above Nat. 1-Hr. Std.	7	5	7	4	2	2	1	1	2	2	9	8	0	6	2	2	0	2	1	0
Days Above Nat. 8-Hr. Std.	12	5	11	8	5	4	2	3	4	3	12	10	0	10	5	2	3	6	4	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				69	108	137	155	99	84	97	52	71	65	66	90	74	114	66	37	49
Max. 24-Hr. Concentration (Nat)				74	108	137	155	99	84	97	52	71	65	63	88	71	109	64	37	47
Annual Average (State)					37.2	32.5	36.5	29.0	25.5	24.9	22.3	22.6	24.3	22.5	25.9	22.2	25.1	25.0	18.9	20.0
Annual Average (Nat)				32.1	37.1	32.6	36.1	29.0	25.9	24.9	22.3	22.6	24.3	21.8	25.6	21.5	24.6	24.5	18.6	19.7
Calc Days Above State 24-Hr Std					76	59	85	30	18	18	6	6	12	12	18	12	24	12	0	0
Calc Days Above Nat 24-Hr Std				0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															63.1	56.4	107.5	84.5	42.0	40.8
Max. 24-Hr. Concentration (Nat)															63.1	56.4	107.5	61.6	42.0	40.8
98th Percentile of 24-Hr Conc.																38.3	54.4	50.5	24.2	35.3
Annual Average (State)																10.6	12.2	13.8	9.0	10.2
Avg. of Qtrly. Means (Nat)																11.2	12.2	13.8	9.0	10.3

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	6.8	7.0	6.4	6.6	6.6	6.8	7.0	6.4	5.8	4.8	4.8	4.9	4.4	4.5	4.7	4.6	4.4	5.5	5.5	3.0
Max. 1-Hr. Concentration	10.0	12.0	10.0	10.0	10.0	8.0	9.0	7.0	7.0	8.7	5.5	6.9	7.9	6.3	6.4	5.4	5.8	7.7	6.0	3.5
Max. 8-Hr. Concentration	6.1	7.5	5.0	5.6	7.5	6.1	6.8	4.6	4.9	5.6	3.8	3.9	3.6	4.6	5.2	3.4	4.0	5.1	4.4	2.6
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.138	0.140	0.138	0.139	0.138	0.138	0.133	0.120	0.112	0.092	0.091	0.090	0.089	0.087	0.094	0.090	0.090	0.077	0.075	0.067
Max. 1-Hr. Concentration	0.140	0.140	0.150	0.140	0.150	0.130	0.150	0.110	0.110	0.097	0.086	0.088	0.086	0.098	0.112	0.081	0.078	0.080	0.076	0.063
Max. Annual Average	0.026	0.025	0.025	0.026	0.025	0.023	0.024	0.022	0.022	0.022	0.021	0.022	0.020	0.020	0.022	0.020	0.019	0.019	0.017	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																		0.020	0.020	
Max. Annual Average																	0.000	0.000	0.000	
Max. 24-Hr. Concentration																	0.000	0.010	0.010	

Table A-77

San Francisco Bay Area Air Basin

County: Contra Costa

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.140	0.128	0.129	0.128	0.129	0.115	0.113	0.112	0.111	0.110	0.121	0.125	0.123	0.126	0.128	0.128	0.120	0.113	0.113	0.109
Peak 8-Hour Indicator	0.105	0.101	0.102	0.099	0.102	0.096	0.093	0.091	0.090	0.090	0.094	0.099	0.097	0.099	0.100	0.100	0.094	0.091	0.091	0.090
4th High 1-Hr. in 3 Yrs	0.130	0.130	0.130	0.130	0.130	0.110	0.110	0.110	0.110	0.121	0.130	0.127	0.127	0.119	0.126	0.130	0.126	0.114	0.106	0.100
Avg. of 4th High 8-Hr. in 3 Yrs	0.088	0.088	0.088	0.086	0.088	0.086	0.083	0.081	0.079	0.079	0.081	0.085	0.083	0.083	0.084	0.084	0.082	0.078	0.081	0.079
Maximum 1-Hr. Concentration	0.150	0.120	0.150	0.140	0.110	0.120	0.110	0.110	0.130	0.121	0.152	0.137	0.108	0.147	0.156	0.138	0.134	0.111	0.101	0.105
Max. 8-Hr. Concentration	0.103	0.092	0.105	0.095	0.097	0.105	0.088	0.092	0.096	0.097	0.114	0.100	0.081	0.109	0.122	0.094	0.102	0.096	0.085	0.083
Days Above State Standard	15	9	22	12	12	7	5	7	10	6	12	15	4	16	8	2	7	10	5	3
Days Above Nat. 1-Hr. Std.	2	0	3	1	0	0	0	0	2	0	4	1	0	2	3	1	1	0	0	0
Days Above Nat. 8-Hr. Std.	5	4	15	5	7	5	2	2	2	2	6	5	0	8	7	1	2	5	1	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				95	115	147	123	73	81	87	73	76	78	71	104	65	112	77	59	64
Max. 24-Hr. Concentration (Nat)				95	115	147	123	73	81	87	73	76	78	67	101	62	106	73	58	62
Annual Average (State)					30.3	29.3	33.4	26.1	25.3	24.7	23.3	21.1	22.3	20.6	26.0	20.4	23.6	24.5	19.4	21.7
Annual Average (Nat)				34.5	30.3	29.3	33.2	26.5	25.1	24.5	23.3	21.1	22.3	20.1	25.3	19.8	22.7	23.8	20.4	21.1
Calc Days Above State 24-Hr Std					53	41	79	47	37	24	18	6	12	17	37	12	25	18	6	6
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															56.6	52.6	68.2	76.7	49.7	73.7
Max. 24-Hr. Concentration (Nat)															56.6	52.6	68.2	76.7	49.7	73.7
98th Percentile of 24-Hr Conc.																42.6	38.4	49.0	33.8	
Annual Average (State)																			9.7	
Avg. of Qtrly. Means (Nat)																10.9	10.2	12.7	9.7	

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	6.1	6.2	5.8	6.3	6.1	6.1	6.1	5.7	5.2	4.5	4.1	3.6	3.2	3.3	3.4	3.3	3.1	2.8	2.6	2.4
Max. 1-Hr. Concentration	11.0	10.0	12.0	15.0	12.0	11.0	9.0	9.0	9.0	7.7	6.5	6.8	5.7	5.7	7.8	4.9	5.2	6.2	3.4	4.1
Max. 8-Hr. Concentration	5.3	5.9	5.5	6.6	5.6	5.8	5.4	5.4	5.0	4.2	2.9	2.9	3.2	3.8	3.3	2.7	2.7	2.5	2.0	2.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.113	0.114	0.113	0.112	0.110	0.098	0.099	0.096	0.097	0.084	0.082	0.079	0.077	0.070	0.075	0.073	0.074	0.062	0.062	0.059
Max. 1-Hr. Concentration	0.110	0.130	0.130	0.130	0.110	0.100	0.120	0.110	0.100	0.081	0.087	0.085	0.076	0.066	0.087	0.074	0.065	0.069	0.070	0.065
Max. Annual Average	0.023	0.023	0.023	0.023	0.023	0.021	0.023	0.020	0.020	0.020	0.019	0.017	0.016	0.016	0.018	0.016	0.015	0.015	0.013	0.013

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.07	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.05	0.04	0.05
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.02	0.01	0.01

Table A-78

San Francisco Bay Area Air Basin

County: Marin

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.103	0.100	0.094	0.094	0.095	0.084	0.074	0.067	0.076	0.080	0.087	0.088	0.087	0.081	0.085	0.083	0.080	0.070	0.072	0.077
Peak 8-Hour Indicator	0.072	0.072	0.067	0.068	0.068	0.064	0.062	0.057	0.056	0.059	0.064	0.064	0.062	0.058	0.059	0.059	0.059	0.054	0.056	0.055
4th High 1-Hr. in 3 Yrs	0.110	0.100	0.090	0.090	0.090	0.080	0.080	0.066	0.080	0.080	0.082	0.088	0.088	0.081	0.092	0.085	0.087	0.075	0.077	0.077
Avg. of 4th High 8-Hr. in 3 Yrs	0.062	0.063	0.059	0.058	0.057	0.053	0.054	0.051	0.047	0.050	0.055	0.057	0.055	0.051	0.051	0.050	0.051	0.047	0.048	0.049
Maximum 1-Hr. Concentration	0.100	0.080	0.100	0.100	0.080	0.080	0.080	0.070	0.080	0.089	0.088	0.105	0.106	0.074	0.102	0.071	0.087	0.077	0.087	0.091
Max. 8-Hr. Concentration	0.077	0.060	0.076	0.076	0.068	0.062	0.067	0.055	0.061	0.061	0.072	0.081	0.073	0.058	0.080	0.058	0.065	0.056	0.067	0.063
Days Above State Standard	1	0	1	1	0	0	0	0	0	0	0	2	1	0	2	0	0	0	0	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				91	73	115	115	63	69	72	74	50	72	55	78	42	83	73	41	52
Max. 24-Hr. Concentration (Nat)				91	73	115	115	63	69	72	74	50	72	52	76	40	79	70	39	51
Annual Average (State)					29.7	25.8	30.6	24.4	23.4	24.2	20.9	21.7	21.9	20.9	22.8		21.1	22.2	17.6	17.9
Annual Average (Nat)					29.5	25.7	30.2	24.4	23.4	24.2	20.8	21.7	21.9	20.1	22.0	19.5	20.4	21.4	17.0	17.4
Calc Days Above State 24-Hr Std					41	23	63	29	6	24	6	0	12	6	12		18	18	0	6
Calc Days Above Nat 24-Hr Std					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																41.7	53.1	69.9	31.9	52.2
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.1	5.5	5.4	5.4	4.7	4.9	5.3	5.4	5.1	3.9	3.5	3.3	3.2	3.3	3.1	2.9	2.6	2.3	2.2	2.0
Max. 1-Hr. Concentration	10.0	10.0	12.0	10.0	9.0	8.0	10.0	8.0	9.0	6.4	6.1	7.1	6.0	5.9	5.6	4.2	5.2	4.1	3.8	3.2
Max. 8-Hr. Concentration	4.6	5.9	4.5	5.0	4.0	5.0	5.7	5.0	4.0	3.0	3.2	4.0	2.6	3.3	2.9	2.3	2.4	1.9	2.0	2.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.099	0.100	0.099	0.104	0.102	0.096	0.091	0.084	0.085	0.077	0.075	0.068	0.065	0.064	0.068	0.065	0.066	0.059	0.060	0.058
Max. 1-Hr. Concentration	0.090	0.110	0.130	0.140	0.100	0.070	0.090	0.080	0.080	0.079	0.060	0.068	0.067	0.062	0.087	0.057	0.061	0.057	0.066	0.057
Max. Annual Average	0.024	0.024	0.023	0.022	0.022	0.021	0.021	0.021	0.021	0.020	0.018	0.018	0.016	0.017	0.018	0.016	0.017	0.017	0.016	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-79

San Francisco Bay Area Air Basin

County: Napa

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.115	0.107	0.106	0.107	0.109	0.100	0.098	0.094	0.098	0.096	0.106	0.107	0.103	0.101	0.106	0.105	0.099	0.091	0.095	0.095
Peak 8-Hour Indicator	0.088	0.083	0.081	0.082	0.084	0.077	0.074	0.071	0.076	0.077	0.085	0.083	0.080	0.076	0.080	0.081	0.075	0.071	0.074	0.075
4th High 1-Hr. in 3 Yrs	0.110	0.110	0.110	0.100	0.100	0.090	0.100	0.090	0.100	0.091	0.105	0.095	0.095	0.091	0.103	0.103	0.099	0.082	0.099	0.092
Avg. of 4th High 8-Hr. in 3 Yrs	0.073	0.069	0.068	0.070	0.071	0.066	0.064	0.063	0.066	0.066	0.073	0.071	0.067	0.063	0.067	0.069	0.066	0.063	0.065	0.066
Maximum 1-Hr. Concentration	0.110	0.090	0.110	0.100	0.100	0.090	0.110	0.090	0.120	0.092	0.130	0.090	0.084	0.125	0.115	0.077	0.099	0.116	0.105	0.092
Max. 8-Hr. Concentration	0.085	0.067	0.080	0.088	0.085	0.072	0.075	0.070	0.083	0.075	0.096	0.075	0.071	0.099	0.090	0.063	0.078	0.082	0.083	0.072
Days Above State Standard	3	0	6	1	2	0	3	0	2	0	4	0	0	3	4	0	1	1	2	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	0	0	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				109	97	117	100	74	70	86	69	39				45	96	70	31	
Max. 24-Hr. Concentration (Nat)				109	97	117	100	74	70	86	69	57	78	60	66	45	91	67	41	59
Annual Average (State)					31.7	33.7	33.0	27.1	25.8		20.2						24.8	26.4		
Annual Average (Nat)					31.7	33.5	33.1	27.1	25.7	23.6	20.3	20.2	18.7	16.9	18.6	16.3	24.0	25.4	20.6	20.1
Calc Days Above State 24-Hr Std					53	47	67	30	18		6						18	24		
Calc Days Above Nat 24-Hr Std					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	6.9	6.9	6.4	6.4	6.4	6.3	6.2	6.0	5.7	5.2	5.0	4.5	4.1	4.1	4.0	3.7	3.5	2.8	2.6	2.3
Max. 1-Hr. Concentration	10.0	11.0	12.0	11.0	12.0	10.0	9.0	8.0	7.0	7.4	7.6	5.6	5.7	5.8	5.5	4.7	5.7	4.2	4.7	3.7
Max. 8-Hr. Concentration	6.6	6.8	5.6	6.0	5.4	7.1	5.8	5.3	4.4	4.6	3.5	3.8	3.9	3.9	4.2	2.8	3.0	2.4	2.5	2.0
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.080	0.091	0.093	0.095	0.090	0.084	0.087	0.081	0.082	0.072	0.071	0.065	0.063	0.058	0.066	0.061	0.064	0.055	0.058	0.056
Max. 1-Hr. Concentration	0.090	0.090	0.090	0.080	0.090	0.070	0.090	0.060	0.080	0.065	0.059	0.077	0.075	0.061	0.086	0.054	0.059	0.052	0.066	0.056
Max. Annual Average	0.017	0.018	0.018	0.018	0.017	0.017	0.017	0.015	0.015	0.015	0.014	0.014	0.012	0.012	0.014	0.012	0.013	0.013	0.012	0.011

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-80

San Francisco Bay Area Air Basin

County: San Francisco

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.080	0.076	0.073	0.074	0.075	0.071	0.063	0.058	0.060	0.062	0.065	0.064	0.067	0.059	0.059	0.057	0.060	0.057	0.062	0.062
Peak 8-Hour Indicator	0.055	0.057	0.056	0.057	0.057	0.056	0.052	0.050	0.047	0.048	0.050	0.051	0.051	0.048	0.048	0.047	0.049	0.049	0.052	0.052
4th High 1-Hr. in 3 Yrs	0.090	0.090	0.070	0.080	0.080	0.070	0.070	0.060	0.060	0.060	0.080	0.071	0.071	0.061	0.067	0.061	0.063	0.059	0.061	0.070
Avg. of 4th High 8-Hr. in 3 Yrs	0.048	0.048	0.037	0.052	0.051	0.049	0.045	0.043	0.042	0.042	0.044	0.046	0.045	0.043	0.044	0.044	0.046	0.044	0.047	0.047
Maximum 1-Hr. Concentration	0.090	0.070	0.090	0.090	0.080	0.060	0.050	0.080	0.080	0.055	0.088	0.071	0.068	0.053	0.079	0.058	0.082	0.054	0.085	0.096
Max. 8-Hr. Concentration	0.065	0.056	0.070	0.070	0.063	0.051	0.047	0.052	0.052	0.045	0.067	0.050	0.059	0.046	0.057	0.043	0.054	0.049	0.059	0.059
Days Above State Standard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				117	101	165	109	81	69	93	50	71	81	56	82	67	70	79	52	54
Max. 24-Hr. Concentration (Nat)				117	101	165	109	81	69	93	50	71	81	52	78	63	67	74	51	52
Annual Average (State)					35.8	33.6	34.9		28.8	28.2	24.8	24.3	24.9	22.9	27.5	25.1	27.8	26.0	22.7	22.5
Annual Average (Nat)					35.9	33.8	35.2	31.7	28.8	28.0	24.8	24.3	24.9	21.7	26.4	24.0	25.9	24.7	21.8	21.6
Calc Days Above State 24-Hr Std					75	70	91		30	36	0	12	18	6	37	12	48	24	6	6
Calc Days Above Nat 24-Hr Std				0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															71.2	47.9	76.6	70.2	41.6	45.8
Max. 24-Hr. Concentration (Nat)															71.2	47.9	76.6	70.2	41.6	45.8
98th Percentile of 24-Hr Conc.																	51.3	57.5	33.0	32.2
Annual Average (State)																		13.1	10.1	9.9
Avg. of Qtrly. Means (Nat)																	11.5	13.1	10.1	9.9

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	8.8	9.1	8.6	8.3	7.7	7.8	7.2	6.7	6.4	5.8	5.6	4.7	4.5	4.2	4.2	3.8	3.7	2.9	2.8	2.6
Max. 1-Hr. Concentration	21.0	20.0	17.0	15.0	14.0	12.0	14.0	10.0	10.0	7.5	8.5	8.6	8.0	7.1	8.6	5.5	5.2	6.8	8.6	3.7
Max. 8-Hr. Concentration	15.0	12.6	10.0	12.8	9.0	6.9	8.4	7.4	6.9	5.3	5.3	5.6	5.7	4.0	4.6	3.2	3.3	2.6	3.6	2.7
Days Above State 8-Hr. Std.	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.141	0.143	0.112	0.116	0.122	0.120	0.112	0.108	0.099	0.092	0.089	0.088	0.083	0.076	0.083	0.084	0.083	0.074	0.074	0.071
Max. 1-Hr. Concentration	0.180	0.110	0.150	0.120	0.140	0.110	0.100	0.090	0.080	0.091	0.088	0.081	0.067	0.080	0.103	0.074	0.073	0.075	0.072	0.063
Max. Annual Average		0.024	0.024	0.026			0.024	0.022	0.024	0.022	0.021	0.021	0.020	0.020	0.021	0.020	0.019	0.019	0.018	0.017

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.07	0.08		0.03	0.04	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.03	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Table A-81

San Francisco Bay Area Air Basin

County: San Mateo

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.121	0.104	0.099	0.097	0.098	0.089	0.078	0.071	0.076	0.075	0.091	0.098	0.100	0.078	0.071	0.071	0.074	0.079	0.084	0.086
Peak 8-Hour Indicator	0.076	0.069	0.066	0.069	0.071	0.067	0.062	0.055	0.056	0.055	0.065	0.067	0.068	0.058	0.054	0.052	0.055	0.057	0.064	0.065
4th High 1-Hr. in 3 Yrs	0.110	0.110	0.110	0.100	0.100	0.090	0.080	0.070	0.080	0.084	0.103	0.103	0.103	0.090	0.079	0.080	0.081	0.081	0.090	0.090
Avg. of 4th High 8-Hr. in 3 Yrs	0.068	0.061	0.060	0.060	0.065	0.058	0.053	0.049	0.050	0.049	0.058	0.061	0.062	0.053	0.049	0.047	0.049	0.052	0.058	0.060
Maximum 1-Hr. Concentration	0.130	0.100	0.120	0.100	0.100	0.080	0.080	0.090	0.100	0.084	0.140	0.097	0.090	0.066	0.082	0.083	0.105	0.090	0.113	0.097
Max. 8-Hr. Concentration	0.077	0.071	0.074	0.076	0.072	0.050	0.056	0.065	0.076	0.066	0.099	0.067	0.073	0.053	0.063	0.063	0.067	0.063	0.078	0.071
Days Above State Standard	5	1	2	2	1	0	0	0	1	0	5	1	0	0	0	0	1	0	1	1
Days Above Nat. 1-Hr. Std.	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				94	90	137	90	80	76	76	48	48	70	56	95	61	68	56	38	65
Max. 24-Hr. Concentration (Nat)				94	90	137	90	80	76	76	48	48	70	49	85	53	65	53	37	62
Annual Average (State)					33.1	27.9	32.1	28.5	26.5	24.8	21.0	21.0	23.9	24.5	28.3	24.0	24.8	24.6	19.8	20.5
Annual Average (Nat)					33.0	28.3	32.1	28.5	26.5	24.9	21.0	21.1	23.9	22.4	24.6	21.2	22.5	22.1	19.3	19.7
Calc Days Above State 24-Hr Std					59	47	73	41	31	36	0	0	12	12	31	18	18	6	0	6
Calc Days Above Nat 24-Hr Std					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															59.7	44.0	67.9	43.0	34.0	35.8
Max. 24-Hr. Concentration (Nat)															59.7	44.0	67.9	43.0	34.0	35.8
98th Percentile of 24-Hr Conc.																36.9	46.1	36.3	30.6	27.9
Annual Average (State)																	11.3	11.5	9.0	9.3
Avg. of Qtrly. Means (Nat)																10.9	11.3	11.5	9.0	9.3

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	7.3	7.0	6.9	6.1	5.8	5.9	5.9	5.8	5.8	5.4	4.9	4.4	3.9	4.2	4.3	4.4	4.2	3.7	3.3	2.9
Max. 1-Hr. Concentration	14.0	12.0	13.0	13.0	13.0	12.0	11.0	12.0	10.0	12.0	10.1	8.6	10.7	8.7	8.0	9.8	7.1	5.8	5.4	4.8
Max. 8-Hr. Concentration	6.4	6.4	5.5	5.4	5.3	5.9	6.5	4.8	5.8	5.4	3.9	3.6	4.2	4.1	3.8	4.4	3.9	2.8	2.6	2.1
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.116	0.130	0.137	0.140	0.132	0.128	0.122	0.116	0.110	0.101	0.096	0.092	0.081	0.077	0.079	0.076	0.078	0.066	0.068	0.064
Max. 1-Hr. Concentration	0.130	0.130	0.120	0.130	0.120	0.120	0.120	0.100	0.090	0.106	0.077	0.090	0.084	0.063	0.104	0.065	0.074	0.066	0.081	0.061
Max. Annual Average	0.022	0.024		0.024	0.024	0.022	0.023	0.021	0.022	0.021	0.019	0.020	0.018	0.018	0.019	0.018	0.017	0.017	0.015	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-82

San Francisco Bay Area Air Basin

County: Santa Clara

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.172	0.155	0.149	0.147	0.148	0.13	0.117	0.117	0.119	0.115	0.125	0.126	0.125	0.127	0.126	0.130	0.120	0.122	0.118	0.115
Peak 8-Hour Indicator	0.130	0.121	0.114	0.111	0.112	0.104	0.095	0.091	0.093	0.093	0.100	0.099	0.098	0.098	0.097	0.101	0.090	0.096	0.097	0.096
4th High 1-Hr. in 3 Yrs	0.160	0.150	0.140	0.140	0.140	0.120	0.120	0.120	0.120	0.118	0.130	0.129	0.129	0.118	0.125	0.125	0.113	0.116	0.116	0.112
Avg. of 4th High 8-Hr. in 3 Yrs	0.103	0.097	0.092	0.092	0.097	0.088	0.082	0.078	0.080	0.080	0.086	0.088	0.085	0.085	0.080	0.081	0.076	0.082	0.086	0.084
Maximum 1-Hr. Concentration	0.160	0.140	0.170	0.140	0.130	0.130	0.130	0.130	0.130	0.130	0.145	0.129	0.114	0.147	0.125	0.113	0.123	0.121	0.124	0.102
Max. 8-Hr. Concentration	0.127	0.105	0.108	0.101	0.102	0.096	0.108	0.101	0.112	0.095	0.109	0.103	0.084	0.111	0.102	0.101	0.096	0.099	0.101	0.084
Days Above State Standard	40	32	41	34	17	10	12	15	14	8	22	24	3	22	12	4	9	10	11	1
Days Above Nat. 1-Hr. Std.	7	1	12	2	3	1	1	1	1	1	6	1	0	3	1	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	14	10	25	19	7	4	5	3	4	2	14	8	0	8	4	1	3	6	6	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				146	147	134	120	112	93	93	60	76	78	100	117	80	82	73	60	65
Max. 24-Hr. Concentration (Nat)				146	150	173	153	112	101	93	60	76	95	92	114	76	77	70	57	63
Annual Average (State)					37.7	35.1	37.9	33.9	28.1	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7		24.8	26.0
Annual Average (Nat)				38.3	40.8	40.4	38.3	33.7	28.4	28.3	25.7	24.9	25.8	25.1	28.7	26.8	28.9		24.2	25.3
Calc Days Above State 24-Hr Std					76	65	85	53	31	36	24	12	18	18	31	42	30		18	25
Calc Days Above Nat 24-Hr Std				0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															77.0	67.2	63.3	57.6	56.1	51.5
Max. 24-Hr. Concentration (Nat)															77.0	67.2	63.3	57.6	56.1	51.5
98th Percentile of 24-Hr Conc.																55.3	55.4	37.3	37.4	39.8
Annual Average (State)																	12.4	12.0	11.7	11.6
Avg. of Qtrly. Means (Nat)																13.6	12.4	12.0	11.7	11.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.9	14.0	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	3.9	3.8
Max. 1-Hr. Concentration	21.0	16.0	13.0	15.0	19.0	18.0	15.0	11.0	14.0	12.0	8.9	8.8	9.9	8.6	9.0	8.9	7.6	5.9	5.5	4.4
Max. 8-Hr. Concentration	16.1	11.3	7.4	10.4	12.0	11.0	11.0	7.8	6.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	4.5	4.0	3.0
Days Above State 8-Hr. Std.	20	5	0	3	8	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	18	5	0	3	7	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.196	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100		0.079
Max. 1-Hr. Concentration	0.190	0.160	0.170	0.160	0.150	0.150	0.140	0.100	0.120	0.107	0.116	0.108	0.118	0.083	0.128	0.114	0.108	0.069		0.073
Max. Annual Average	0.035	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024			

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-83

San Francisco Bay Area Air Basin

County: Solano

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.119	0.112	0.113	0.111	0.117	0.107	0.103	0.100	0.103	0.102	0.111	0.114	0.113	0.115	0.121	0.124	0.117	0.114	0.101	0.107
Peak 8-Hour Indicator	0.093	0.090	0.095	0.096	0.097	0.087	0.084	0.082	0.084	0.083	0.089	0.093	0.092	0.093	0.098	0.099	0.092	0.090	0.089	0.088
4th High 1-Hr. in 3 Yrs	0.130	0.120	0.110	0.110	0.110	0.110	0.100	0.100	0.100	0.100	0.109	0.113	0.113	0.110	0.117	0.117	0.111	0.099	0.099	0.099
Avg. of 4th High 8-Hr. in 3 Yrs	0.075	0.073	0.077	0.077	0.078	0.074	0.074	0.074	0.074	0.073	0.077	0.079	0.078	0.077	0.081	0.080	0.075	0.074	0.073	0.071
Maximum 1-Hr. Concentration	0.120	0.090	0.120	0.130	0.120	0.110	0.110	0.100	0.130	0.107	0.133	0.113	0.103	0.121	0.129	0.096	0.102	0.109	0.101	0.104
Max. 8-Hr. Concentration	0.087	0.076	0.092	0.093	0.086	0.087	0.087	0.086	0.096	0.082	0.099	0.095	0.083	0.097	0.101	0.076	0.084	0.083	0.077	0.077
Days Above State Standard	7	0	14	6	4	2	5	4	4	3	13	8	1	9	9	1	3	4	2	1
Days Above Nat. 1-Hr. Std.	0	0	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	0	5	2	1	1	1	2	2	0	5	3	0	3	4	0	0	0	0	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																	58	84	39	51
Max. 24-Hr. Concentration (Nat)										63	59	49	85	71	84	53	86	80	38	51
Annual Average (State)																		22.2	17.3	19.6
Annual Average (Nat)											18.7	17.2	18.3	17.2	19.3	15.0	19.5	21.4	16.8	18.9
Calc Days Above State 24-Hr Std																		12	0	6
Calc Days Above Nat 24-Hr Std											0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															90.5	60.1	90.1	72.3	30.8	39.7
Max. 24-Hr. Concentration (Nat)															90.5	60.1	90.1	72.3	30.8	39.7
98th Percentile of 24-Hr Conc.																44.0	56.0	54.0	25.1	36.9
Annual Average (State)																11.6	12.5	13.6	9.4	11.1
Avg. of Qtrly. Means (Nat)																11.6	12.5	13.6	9.4	11.1

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	10.8	10.9	10.3	10.3	10.1	10.4	10.3	9.3	8.4	7.5	7.1	6.2	5.6	5.4	5.7	5.5	5.3	4.6	4.1	4.0
Max. 1-Hr. Concentration	12.0	13.0	13.0	14.0	13.0	12.0	13.0	11.0	12.0	8.7	7.0	6.4	6.5	7.2	6.6	6.5	5.6	5.8	4.0	4.0
Max. 8-Hr. Concentration	8.6	10.8	9.4	10.6	11.5	9.0	9.6	6.6	7.9	6.5	5.3	4.9	4.9	5.3	5.5	5.1	4.1	3.9	2.9	3.4
Days Above State 8-Hr. Std.	0	4	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	4	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.093	0.097	0.090	0.090	0.094	0.094	0.096	0.090	0.087	0.075	0.072	0.069	0.065	0.064	0.068	0.067	0.066	0.056	0.055	0.054
Max. 1-Hr. Concentration	0.090	0.100	0.080	0.090	0.130	0.080	0.090	0.070	0.070	0.066	0.070	0.071	0.068	0.064	0.083	0.064	0.057	0.051	0.067	0.049
Max. Annual Average	0.018		0.018	0.019	0.018	0.018	0.018	0.017	0.016	0.016	0.015	0.015	0.013	0.014	0.014	0.013	0.013	0.013	0.012	0.012

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00

Table A-84

A portion of Solano County lies within the Sacramento Valley Air Basin.

San Francisco Bay Area Air Basin

County: Sonoma

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.106	0.105	0.102	0.101	0.104	0.102	0.103	0.095	0.091	0.081	0.086	0.086	0.084	0.079	0.085	0.082	0.083	0.071	0.074	0.072
Peak 8-Hour Indicator	0.089	0.087	0.087	0.087	0.092	0.085	0.083	0.076	0.074	0.070	0.065	0.070	0.063	0.059	0.062	0.062	0.063	0.057	0.059	0.057
4th High 1-Hr. in 3 Yrs	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.090	0.090	0.080	0.084	0.084	0.085	0.077	0.090	0.086	0.086	0.077	0.086	0.076
Avg. of 4th High 8-Hr. in 3 Yrs	0.068	0.068	0.069	0.071	0.076	0.072	0.072	0.067	0.063	0.058	0.057	0.058	0.054	0.052	0.054	0.055	0.055	0.052	0.054	0.051
Maximum 1-Hr. Concentration	0.110	0.100	0.110	0.110	0.100	0.090	0.100	0.090	0.080	0.086	0.097	0.089	0.093	0.068	0.095	0.078	0.086	0.077	0.096	0.076
Max. 8-Hr. Concentration	0.091	0.078	0.097	0.096	0.083	0.073	0.078	0.080	0.062	0.072	0.077	0.077	0.080	0.054	0.076	0.056	0.063	0.060	0.079	0.060
Days Above State Standard	3	1	2	2	3	0	3	0	0	0	1	0	0	0	1	0	0	0	1	0
Days Above Nat. 1-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)												38	85	56	57	48	78	64	36	48
Max. 24-Hr. Concentration (Nat)										61	46	38	85	53	54	46	74	60	34	47
Annual Average (State)													18.7			18.2	21.9	20.4	16.9	18.0
Annual Average (Nat)											15.4	16.9	18.6	18.2		17.6	21.0	19.7	16.4	17.3
Calc Days Above State 24-Hr Std													12			0	18	12	0	0
Calc Days Above Nat 24-Hr Std											0	0	0	0		0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															54.9	40.1	75.9	50.7	38.8	26.6
Max. 24-Hr. Concentration (Nat)															54.9	40.1	75.9	50.7	38.8	26.6
98th Percentile of 24-Hr Conc.																36.8	41.4	42.4	29.8	25.2
Annual Average (State)																10.3	10.8		8.8	8.3
Avg. of Qtrly. Means (Nat)																10.3	10.8	10.5	8.8	8.3

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.3	5.6	5.5	5.2	5.5	5.6	5.2	4.4	4.3	3.8	3.6	3.1	3.0	3.1	3.3	3.2	3.1	2.7	2.4	2.1
Max. 1-Hr. Concentration	9.0	9.0	7.0	9.0	9.0	7.0	6.0	6.0	6.0	5.1	4.9	5.6	5.4	5.2	5.7	4.5	4.8	3.7	3.1	2.7
Max. 8-Hr. Concentration	5.9	5.3	4.3	5.1	6.1	5.1	4.0	4.0	3.8	3.4	2.8	3.0	3.3	3.2	3.4	3.1	2.4	2.1	1.8	1.6
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.120	0.119	0.110	0.103	0.097	0.094	0.083	0.083	0.082	0.080	0.076	0.067	0.064	0.057	0.062	0.060	0.061	0.055	0.056	0.054
Max. 1-Hr. Concentration	0.160	0.110	0.090	0.120	0.090	0.090	0.090	0.100	0.090	0.084	0.066	0.062	0.061	0.057	0.074	0.054	0.057	0.054	0.055	0.048
Max. Annual Average	0.017	0.016	0.016	0.016		0.014	0.015	0.015		0.015	0.015	0.014	0.013	0.015	0.014	0.013	0.013	0.013	0.012	0.011

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-85

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin

County: Fresno

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.162	0.172	0.172	0.168	0.170	0.158	0.167	0.162	0.162	0.155	0.152	0.154	0.153	0.162	0.159	0.158	0.146	0.151	0.151	0.151
Peak 8-Hour Indicator	0.123	0.128	0.128	0.129	0.129	0.118	0.128	0.122	0.124	0.115	0.119	0.120	0.121	0.126	0.126	0.126	0.119	0.120	0.120	0.121
4th High 1-Hr. in 3 Yrs	0.160	0.170	0.170	0.170	0.160	0.150	0.160	0.160	0.160	0.150	0.144	0.146	0.146	0.161	0.161	0.161	0.146	0.151	0.151	0.151
Avg. of 4th High 8-Hr. in 3 Yrs	0.110	0.117	0.118	0.121	0.115	0.110	0.110	0.108	0.111	0.107	0.108	0.107	0.111	0.115	0.113	0.111	0.108	0.115	0.111	0.104
Maximum 1-Hr. Concentration	0.160	0.180	0.200	0.190	0.150	0.150	0.180	0.160	0.160	0.144	0.173	0.154	0.147	0.169	0.155	0.165	0.149	0.164	0.152	0.126
Max. 8-Hr. Concentration	0.131	0.135	0.150	0.125	0.121	0.117	0.130	0.121	0.121	0.111	0.126	0.123	0.127	0.134	0.123	0.131	0.12	0.132	0.116	0.103
Days Above State Standard	112	118	127	130	109	79	94	86	81	65	81	96	95	79	95	92	108	106	108	29
Days Above Nat. 1-Hr. Std.	34	39	43	47	24	14	30	25	19	14	22	31	13	30	18	23	21	25	17	1
Days Above Nat. 8-Hr. Std.	85	94	112	113	92	55	81	69	59	55	63	78	75	69	83	79	94	95	97	23

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				162	204	297	152	125	190	127	126	144	124	149	164	139	204	111	93	79
Max. 24-Hr. Concentration (Nat)				162	250	297	152	125	190	127	126	144	124	141	162	138	193	106	92	79
Annual Average (State)					49.3	65.5	60.0	52.1	53.0	38.1	48.9	39.8	46.7	39.8	46.9	41.0	43.3	43.4	44.0	40.5
Annual Average (Nat)				52.1	56.3	65.5	60.0	52.2	53.1	49.7	48.8	39.3	46.7	39.3	46.6	40.3	44.4	42.6	43.4	40.0
Calc Days Above State 24-Hr Std					176	196	185	178	152	72	137	89	107	91	119	72	98	123	128	94
Calc Days Above Nat 24-Hr Std				7	12	26	0	0	6	0	0	0	0	0	0	0	6	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															136.0	160.0	110.0	99.7	79.9	77.0
Max. 24-Hr. Concentration (Nat)															136.0	160.0	110.0	84.0	63.0	71.0
98th Percentile of 24-Hr Conc.															120.0	108.0	76.0	77.0	56.0	52.4
Annual Average (State)															23.4			21.3	17.8	17.0
Avg. of Qtrly. Means (Nat)															27.7	18.4	19.8	21.6	17.9	17.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	13.4	13.9	13.5	13.8	13.7	13.9	10.2	10.2	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	5.8	5.3	4.8	4.1
Max. 1-Hr. Concentration	18.0	21.0	15.0	19.0	23.0	15.0	15.0	13.0	13.0	15.0	12.0	10.1	9.9	10.3	11.9	9.0	6.7	6.1	5.0	3.9
Max. 8-Hr. Concentration	10.7	16.3	10.9	16.5	13.1	10.3	10.4	7.6	9.3	8.9	9.1	6.8	7.5	8.0	7.7	6.2	4.6	4.5	4.1	2.9
Days Above State 8-Hr. Std.	6	12	3	3	17	3	1	0	2	0	1	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	6	8	3	4	13	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.144	0.148	0.145	0.144	0.151	0.156	0.129	0.123	0.121	0.124	0.124	0.115	0.107	0.100	0.107	0.106	0.102	0.093	0.095	0.090
Max. 1-Hr. Concentration	0.150	0.190	0.150	0.210	0.190	0.160	0.120	0.110	0.120	0.119	0.111	0.109	0.103	0.112	0.108	0.094	0.090	0.089	0.092	0.077
Max. Annual Average	0.031	0.019	0.030	0.032	0.032	0.026	0.025	0.023	0.023	0.023	0.022	0.021	0.021	0.020	0.024	0.021	0.021	0.020	0.020	0.018

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02							
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	
Max. 24-Hr. Concentration	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00						0.00	

Table A-86

San Joaquin Valley Air Basin

County: Kern

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.162	0.162	0.166	0.169	0.167	0.164	0.166	0.160	0.154	0.154	0.163	0.164	0.167	0.161	0.152	0.150	0.141	0.143	0.147	0.145
Peak 8-Hour Indicator	0.119	0.119	0.134	0.134	0.131	0.126	0.125	0.121	0.122	0.123	0.128	0.130	0.135	0.131	0.127	0.129	0.116	0.119	0.122	0.122
4th High 1-Hr. in 3 Yrs	0.160	0.160	0.160	0.170	0.170	0.160	0.160	0.160	0.160	0.160	0.165	0.165	0.164	0.158	0.154	0.154	0.138	0.142	0.150	0.151
Avg. of 4th High 8-Hr. in 3 Yrs	0.111	0.114	0.118	0.118	0.120	0.119	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.111	0.111	0.109	0.112	0.115	0.116
Maximum 1-Hr. Concentration	0.160	0.160	0.170	0.170	0.180	0.170	0.160	0.150	0.160	0.175	0.168	0.165	0.146	0.165	0.140	0.151	0.138	0.151	0.156	0.155
Max. 8-Hr. Concentration	0.121	0.126	0.131	0.127	0.136	0.123	0.120	0.115	0.125	0.129	0.134	0.137	0.118	0.136	0.112	0.117	0.115	0.120	0.127	0.126
Days Above State Standard	112	99	124	134	132	120	119	106	110	114	115	114	66	81	105	95	95	95	122	102
Days Above Nat. 1-Hr. Std.	27	33	46	56	42	37	37	10	37	37	38	44	8	29	12	16	16	17	28	8
Days Above Nat. 8-Hr. Std.	90	94	112	124	112	96	107	100	98	101	104	109	55	75	88	82	85	89	116	103

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				206	237	287	189	186	131	192	195	153	137	166	186	153	216	194	134	93
Max. 24-Hr. Concentration (Nat)				244	237	287	189	183	130	190	195	153	137	159	183	145	205	189	136	85
Annual Average (State)						80.1	70.0	62.4	55.8	41.5	57.9	54.1	42.9	40.5	60.1	53.9	51.3	59.9	52.3	43.0
Annual Average (Nat)				60.0	79.3	79.3	69.9	62.9	54.3	39.6	58.2	54.1	46.1	38.7	59.5	53.1	47.7	59.2	52.4	42.8
Calc Days Above State 24-Hr Std						292	225	246	178	106	184	204	80	95	173	158	133	256	167	113
Calc Days Above Nat 24-Hr Std				31	23	31	18	8	0	0	3	0	0	0	8	0	9	6	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															134.8	112.7	154.7	104.3	84.5	72.8
Max. 24-Hr. Concentration (Nat)															134.8	112.7	154.7	89.6	67.8	70.0
98th Percentile of 24-Hr Conc.															111.3	95.4	95.9	80.4	51.9	53.9
Annual Average (State)																22.6	20.8	24.1	24.8	18.2
Avg. of Qtrly. Means (Nat)															26.2	22.6	21.8	24.1	19.7	18.9

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	7.4	7.3	7.0	7.4	8.8	9.5	9.5	8.5	6.8	5.4	5.3	5.1	4.7	4.1	4.8	6.0	5.4	4.6	3.0	2.7
Max. 1-Hr. Concentration	10.0	14.0	10.0	12.0	14.0	13.0	13.0	11.0	8.0	8.8	7.8	8.7	6.1	5.7	10.5	10.1	16.0	4.5	4.5	4.1
Max. 8-Hr. Concentration	6.0	8.8	6.9	8.9	11.0	8.6	8.1	5.8	6.1	6.4	6.2	7.7	4.0	3.9	5.0	5.4	3.5	2.5	3.7	2.6
Days Above State 8-Hr. Std.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.127	0.125	0.125	0.128	0.133	0.136	0.131	0.120	0.114	0.110	0.109	0.105	0.103	0.096	0.098	0.100	0.109	0.107	0.106	0.094
Max. 1-Hr. Concentration	0.160	0.120	0.100	0.120	0.130	0.140	0.110	0.110	0.100	0.089	0.109	0.110	0.081	0.100	0.107	0.089	0.115	0.107	0.085	0.083
Max. Annual Average	0.031	0.030	0.029	0.032	0.033	0.031	0.030	0.027	0.017	0.017	0.029	0.029	0.024	0.022	0.027	0.024	0.022	0.024	0.020	0.017

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.09	0.09	0.08	0.07	0.06	0.06	0.04	0.04	0.03	0.02	0.02	0.03	0.03		0.01	0.02	0.02			
Max. Annual Average	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00			
Max. 24-Hr. Concentration	0.03	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.00	0.01			

Table A-87

A portion of Kern County lies within the Mojave Desert Air Basin.

San Joaquin Valley Air Basin

County: Kings

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.127	0.125	0.128	0.127	0.124	0.119	0.112	0.106	0.109	0.111	0.106	0.137	0.137	0.137	0.124	0.127	0.124	0.125	0.120	0.119
Peak 8-Hour Indicator	0.106	0.105	0.106	0.104	0.103	0.100	0.096	0.091	0.090	0.099	0.094	0.121	0.120	0.118	0.105	0.111	0.108	0.109	0.103	0.102
4th High 1-Hr. in 3 Yrs	0.120	0.120	0.130	0.130	0.130	0.130	0.110	0.100	0.110	0.109	0.109	0.138	0.138	0.138	0.128	0.128	0.124	0.124	0.121	0.121
Avg. of 4th High 8-Hr. in 3 Yrs	0.098	0.088	0.088	0.088	0.096	0.091	0.088	0.080	0.080	0.093	0.086	0.096	0.097	0.105	0.099	0.102	0.098	0.099	0.095	0.093
Maximum 1-Hr. Concentration	0.140	0.110	0.130	0.150	0.130	0.100	0.110	0.100	0.110	0.119	0.096	0.144	0.126	0.143	0.140	0.124	0.127	0.125	0.120	0.121
Max. 8-Hr. Concentration	0.101	0.096	0.104	0.107	0.112	0.092	0.093	0.078	0.093	0.102	0.085	0.121	0.106	0.113	0.111	0.110	0.107	0.105	0.100	0.094
Days Above State Standard	14	1	19	34	13	4	15	1	2	9	2	78	23	27	28	48	21	29	19	7
Days Above Nat. 1-Hr. Std.	2	0	2	3	1	0	0	0	0	0	0	8	2	3	2	0	1	1	0	0
Days Above Nat. 8-Hr. Std.	14	1	14	28	10	3	9	0	2	12	1	81	26	31	25	51	18	27	15	9

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				170	213	439	279	178	239	129	279	143	199	149	185	137	221	174	150	219
Max. 24-Hr. Concentration (Nat)				159	202	439	279	167	239	125	279	143	199	146	174	128	185	168	150	217
Annual Average (State)					67.0	58.8	62.9	54.7	56.3	49.6	52.9	40.9	47.3		53.1	51.3		55.4	47.5	43.6
Annual Average (Nat)				53.2	66.0	63.9	62.9	54.7	56.3	50.1	52.9	40.8	48.2		53.0	46.6	57.4	53.5	46.9	44.6
Calc Days Above State 24-Hr Std					208	157	189	172	170	166	174	115	102		135	132		172	149	100
Calc Days Above Nat 24-Hr Std				7	29	14	14	6	20	0	12	0	6		9	0	14	6	0	3

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															53.0	76.0	123.2	90.7	55.1	61.0
Max. 24-Hr. Concentration (Nat)															53.0	76.0	123.2	90.7	55.1	61.0
98th Percentile of 24-Hr Conc.																	89.5	65.1	42.2	49.4
Annual Average (State)																			16.2	
Avg. of Qtrly. Means (Nat)																16.4	19.2	21.5	16.3	17.5

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator										0.087	0.094	0.091	0.091	0.081	0.084	0.073	0.068	0.073	0.073	0.072
Max. 1-Hr. Concentration										0.082	0.094	0.066	0.080	0.086	0.086	0.072	0.096	0.067	0.076	0.069
Max. Annual Average										0.015	0.015		0.014	0.014		0.014		0.014	0.013	0.012

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-88

San Joaquin Valley Air Basin

County: Madera

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator					0.118	0.113	0.117	0.114	0.125	0.121	0.124	0.122		0.122	0.115	0.111	0.104	0.111	0.115	0.115
Peak 8-Hour Indicator					0.103	0.103	0.101	0.098	0.107	0.106	0.109	0.106		0.106	0.102	0.101	0.097	0.098	0.097	0.099
4th High 1-Hr. in 3 Yrs				0.110	0.120	0.120	0.120	0.110	0.130	0.130	0.130	0.121	0.084	0.110	0.117	0.117	0.104	0.115	0.119	0.119
Avg. of 4th High 8-Hr. in 3 Yrs				0.097	0.096	0.093	0.093	0.091	0.096	0.091	0.093	0.093	0.070	0.081	0.083	0.089	0.088	0.091	0.093	0.089
Maximum 1-Hr. Concentration				0.130	0.120	0.110	0.130	0.120	0.150	0.103	0.117	0.134	0.085	0.127	0.118	0.104	0.115	0.141	0.120	0.097
Max. 8-Hr. Concentration				0.106	0.101	0.098	0.101	0.097	0.110	0.086	0.102	0.111	0.080	0.116	0.095	0.096	0.093	0.110	0.102	0.084
Days Above State Standard				11	15	6	24	15	28	4	16	28	0	15	12	8	15	21	15	3
Days Above Nat. 1-Hr. Std.				1	0	0	2	0	6	0	0	2	0	1	0	0	0	2	0	0
Days Above Nat. 8-Hr. Std.				8	15	13	17	12	26	1	15	28	0	12	10	9	13	18	14	0

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				108	162	174	118	96	128	105	111	89								
Max. 24-Hr. Concentration (Nat)				108	162	174	118	96	128	105	111	89								
Annual Average (State)				52.7	53.7		51.7	43.6	47.1	40.4	41.9									
Annual Average (Nat)				52.7	53.7	53.5	52.0	43.6	47.1	40.1	41.9									
Calc Days Above State 24-Hr Std				159	148		165	118	138	78	125									
Calc Days Above Nat 24-Hr Std				0	6	7	0	0	0	0	0									

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)																				
Max. 24-Hr. Concentration (Nat)																				
98th Percentile of 24-Hr Conc.																				
Annual Average (State)																				
Avg. of Qtrly. Means (Nat)																				

No Monitoring Data Available

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration																				
Max. 8-Hr. Concentration																				
Days Above State 8-Hr. Std.																				
Days Above Nat. 8-Hr. Std.																				

No Monitoring Data Available

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator													0.088	0.053	0.068	0.066	0.066	0.060	0.056	0.055
Max. 1-Hr. Concentration													0.077	0.060	0.084	0.060	0.060	0.058	0.054	0.053
Max. Annual Average														0.011	0.014	0.013	0.011	0.012	0.010	

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-89

San Joaquin Valley Air Basin

County: Merced

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator								0.124	0.122	0.122	0.124	0.127	0.129	0.132	0.134	0.132	0.122	0.124	0.124	0.124
Peak 8-Hour Indicator								0.107	0.106	0.106	0.109	0.110	0.111	0.113	0.118	0.116	0.108	0.110	0.113	0.114
4th High 1-Hr. in 3 Yrs							0.120	0.120	0.120	0.120	0.125	0.125	0.125	0.131	0.132	0.132	0.120	0.121	0.122	0.122
Avg. of 4th High 8-Hr. in 3 Yrs							0.097	0.099	0.098	0.098	0.100	0.102	0.094	0.096	0.097	0.106	0.101	0.101	0.102	0.102
Maximum 1-Hr. Concentration							0.130	0.120	0.130	0.123	0.130	0.131	0.102	0.143	0.132	0.120	0.113	0.138	0.122	0.114
Max. 8-Hr. Concentration							0.111	0.107	0.110	0.107	0.114	0.116	0.095	0.129	0.117	0.112	0.105	0.125	0.110	0.109
Days Above State Standard							13	39	22	31	38	44	1	37	42	32	26	55	54	14
Days Above Nat. 1-Hr. Std.							2	0	1	0	3	1	0	3	2	0	0	2	0	0
Days Above Nat. 8-Hr. Std.							12	40	19	26	36	44	1	35	40	37	29	56	54	15

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				114	148	211	145	98	121	131	100	61			143	112	117	88	75	57
Max. 24-Hr. Concentration (Nat)				114	148	211	145	98	121	131	100	61			134	104	113	85	74	56
Annual Average (State)					52.0	53.4	52.4	45.8	42.5	39.4	38.7					36.1		39.6	32.7	28.7
Annual Average (Nat)					52.0	53.2	52.4	45.9	42.5	39.2	38.7					34.9	39.1	38.8	32.1	27.9
Calc Days Above State 24-Hr Std					107	148	152	139	109	61	96					70		85	44	12
Calc Days Above Nat 24-Hr Std					0	6	0	0	0	0	0					0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															108.7	86.1	80.3	66.0	46.7	53.1
Max. 24-Hr. Concentration (Nat)															108.7	86.1	80.3	66.0	46.7	53.1
98th Percentile of 24-Hr Conc.															91.9			55.1	44.2	43.0
Annual Average (State)																		18.7	15.7	15.2
Avg. of Qtrly. Means (Nat)																16.7		18.8	15.7	15.2

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator																				
Max. 1-Hr. Concentration							10.0	9.0												
Max. 8-Hr. Concentration							5.4	4.8												
Days Above State 8-Hr. Std.							0	0												
Days Above Nat. 8-Hr. Std.							0	0												

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator								0.075	0.080	0.080	0.078	0.076	0.076	0.075	0.074		0.079	0.072	0.070	0.066
Max. 1-Hr. Concentration							0.090	0.070	0.090	0.076	0.073	0.071	0.072	0.063	0.078		0.066	0.068	0.063	0.059
Max. Annual Average									0.014	0.013	0.012	0.012	0.013	0.012				0.012	0.012	0.011

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator																				
Max. Annual Average																				
Max. 24-Hr. Concentration																				

No Monitoring Data Available

Table A-90

San Joaquin Valley Air Basin

County: San Joaquin

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.141	0.136	0.134	0.134	0.133	0.132	0.119	0.117	0.117	0.117	0.122	0.123	0.122	0.124	0.123	0.121	0.118	0.113	0.113	0.114
Peak 8-Hour Indicator	0.119	0.118	0.110	0.110	0.110	0.112	0.098	0.098	0.098	0.097	0.109	0.104	0.104	0.100	0.103	0.104	0.100	0.096	0.097	0.095
4th High 1-Hr. in 3 Yrs	0.140	0.140	0.130	0.130	0.130	0.130	0.120	0.120	0.110	0.119	0.124	0.120	0.119	0.116	0.118	0.118	0.118	0.111	0.104	0.103
Avg. of 4th High 8-Hr. in 3 Yrs	0.104	0.101	0.097	0.098	0.093	0.090	0.087	0.088	0.088	0.087	0.091	0.092	0.087	0.087	0.087	0.088	0.084	0.081	0.081	0.081
Maximum 1-Hr. Concentration	0.140	0.140	0.160	0.130	0.120	0.130	0.120	0.110	0.130	0.128	0.134	0.140	0.119	0.126	0.144	0.122	0.114	0.108	0.104	0.109
Max. 8-Hr. Concentration	0.112	0.115	0.110	0.103	0.103	0.102	0.095	0.090	0.097	0.101	0.107	0.096	0.099	0.100	0.113	0.094	0.092	0.096	0.089	0.097
Days Above State Standard	35	31	54	37	10	17	26	21	12	16	16	26	6	19	16	9	9	12	6	5
Days Above Nat. 1-Hr. Std.	5	3	1	4	0	1	0	0	1	1	2	2	0	1	3	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	24	17	30	21	4	7	10	10	4	6	9	14	3	7	10	3	2	3	2	1

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				115	146	251	140	145	104	109	109	127	130	115	155	110	147	91	90	61
Max. 24-Hr. Concentration (Nat)				153	146	251	140	145	104	109	109	127	130	106	150	104	140	87	88	60
Annual Average (State)						51.4				37.0		27.4	29.7	30.1	37.7	33.7	36.6	36.1	28.4	29.4
Annual Average (Nat)				51.2	50.4	51.2	52.4	44.8		36.9		27.4	29.7	29.1	36.3	32.2	35.9	35.5	28.1	28.6
Calc Days Above State 24-Hr Std						128				63		19	30	50	67	60	64	58	20	18
Calc Days Above Nat 24-Hr Std				0	0	6	0	0	0	0		0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															101.0	78.0	76.0	64.0	45.0	41.0
Max. 24-Hr. Concentration (Nat)															101.0	78.0	76.0	64.0	45.0	41.0
98th Percentile of 24-Hr Conc.															79.0	55.0	58.0	50.0	41.0	36.0
Annual Average (State)															19.7			16.7	13.6	13.2
Avg. of Qtrly. Means (Nat)															19.8	15.5	13.9	16.7	13.6	13.2

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	10.3	13.6	13.9	14.1	12.2	13.7	13.2	11.5	9.2	7.6	7.5	7.3	6.2	6.1	6.2	6.9	4.8	4.1	3.7	3.3
Max. 1-Hr. Concentration	13.0	19.0	16.0	14.0	16.0	17.0	15.0	11.0	10.0	11.3	10.3	11.0	7.7	10.2	11.3	8.1	8.4	6.0	5.8	3.7
Max. 8-Hr. Concentration	8.4	12.1	12.9	11.4	11.0	11.5	11.4	8.3	6.9	7.8	6.2	7.6	4.2	7.9	7.8	6.6	6.0	3.2	3.1	2.5
Days Above State 8-Hr. Std.	0	9	1	1	6	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	8	1	1	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.111	0.122	0.122	0.126	0.122	0.130	0.134	0.132	0.132	0.131	0.127	0.113	0.102	0.097	0.103	0.102	0.100	0.085	0.086	0.082
Max. 1-Hr. Concentration	0.110	0.160	0.100	0.110	0.130	0.120	0.110	0.190	0.160	0.144	0.119	0.088	0.090	0.102	0.106	0.099	0.087	0.077	0.088	0.079
Max. Annual Average	0.020	0.023	0.025	0.026	0.025	0.026	0.025	0.023	0.024	0.024	0.022	0.023	0.022	0.023	0.015	0.021	0.019	0.021	0.018	0.017

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.03	0.03	0.04	0.03															
Max. Annual Average	0.00	0.00	0.00	0.00	0.00															
Max. 24-Hr. Concentration	0.01	0.01	0.02	0.01	0.01															

Table A-91

San Joaquin Valley Air Basin

County: Stanislaus

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.148	0.152	0.149	0.143	0.142	0.131	0.126	0.122	0.119	0.120	0.127	0.129	0.131	0.132	0.130	0.127	0.117	0.125	0.125	0.122
Peak 8-Hour Indicator	0.124	0.125	0.117	0.115	0.115	0.112	0.109	0.104	0.102	0.101	0.109	0.107	0.109	0.111	0.111	0.113	0.105	0.110	0.108	0.105
4th High 1-Hr. in 3 Yrs	0.140	0.140	0.140	0.140	0.140	0.130	0.120	0.120	0.110	0.114	0.125	0.125	0.125	0.129	0.127	0.131	0.111	0.123	0.119	0.119
Avg. of 4th High 8-Hr. in 3 Yrs	0.109	0.102	0.100	0.099	0.102	0.099	0.095	0.095	0.095	0.093	0.095	0.096	0.096	0.098	0.095	0.096	0.091	0.095	0.096	0.094
Maximum 1-Hr. Concentration	0.150	0.130	0.150	0.140	0.130	0.150	0.120	0.120	0.130	0.123	0.131	0.129	0.120	0.153	0.119	0.131	0.124	0.135	0.119	0.106
Max. 8-Hr. Concentration	0.122	0.102	0.127	0.126	0.120	0.110	0.102	0.102	0.108	0.100	0.111	0.111	0.100	0.125	0.104	0.107	0.100	0.113	0.100	0.089
Days Above State Standard	57	39	77	64	41	32	33	27	19	28	28	39	15	35	19	16	16	31	21	6
Days Above Nat. 1-Hr. Std.	10	2	18	5	3	3	0	0	2	0	2	2	0	4	0	1	0	1	0	0
Days Above Nat. 8-Hr. Std.	43	21	68	44	26	22	13	11	13	12	21	20	8	29	12	10	11	25	18	4

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)					148	171	157	150	154	160	120	133	119	135	162	119	160	97	88	79
Max. 24-Hr. Concentration (Nat)				175	148	180	157	150	154	160	120	133	119	125	157	112	158	93	87	80
Annual Average (State)						49.6	53.0	43.6	42.0	41.1	41.2	32.0	37.1	31.9	42.8	35.4	40.5	37.2	31.4	30.7
Annual Average (Nat)				48.4	52.8	49.1	53.7	43.6	42.0	41.1	41.3	32.0	37.1	31.0	41.1	34.9	39.7	36.6	30.6	30.0
Calc Days Above State 24-Hr Std						135	148	106	98	89	100	47	56	47	90	68	61	76	48	36
Calc Days Above Nat 24-Hr Std				7	0	6	6	0	0	6	0	0	0	0	0	0	3	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															108.0	77.0	95.0	87.1	66.9	67.3
Max. 24-Hr. Concentration (Nat)															108.0	77.0	95.0	83.0	64.0	53.0
98th Percentile of 24-Hr Conc.															100.0	71.0	69.0	69.0	47.0	45.0
Annual Average (State)																18.7	15.6	18.7	14.5	13.6
Avg. of Qtrly. Means (Nat)															24.9	18.7	15.6	18.7	14.5	13.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	9.5	10.4	10.5	10.6	11.9	12.4	12.4	10.1	9.0	7.7	7.4	7.0	6.0	5.5	6.1	7.0	6.4	5.3	4.5	4.2
Max. 1-Hr. Concentration	15.0	18.0	12.0	17.0	17.0	17.0	19.0	10.0	11.0	9.5	11.4	9.2	7.1	9.4	11.4	8.0	7.8	5.2	5.3	4.6
Max. 8-Hr. Concentration	11.0	11.3	8.6	13.1	13.4	10.9	10.8	6.5	8.6	6.4	5.7	6.5	5.0	7.3	6.4	6.0	6.0	4.5	3.8	3.0
Days Above State 8-Hr. Std.	2	4	0	2	11	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	4	0	1	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.111	0.121	0.126	0.129	0.126	0.128	0.119	0.109	0.108	0.102	0.102	0.095	0.096	0.089	0.103	0.098	0.100	0.081	0.087	0.080
Max. 1-Hr. Concentration	0.120	0.130	0.120	0.130	0.140	0.100	0.110	0.100	0.110	0.093	0.093	0.087	0.093	0.088	0.103	0.079	0.087	0.083	0.091	0.065
Max. Annual Average	0.022	0.024	0.024	0.027		0.026	0.024	0.022	0.023	0.023	0.022	0.022	0.021	0.018	0.022	0.019	0.018	0.017	0.017	0.015

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.02	0.02	0.03	0.03	0.02	0.02													
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00													
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.00	0.01													

Table A-92

San Joaquin Valley Air Basin

County: Tulare

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.133	0.140	0.143	0.144	0.142	0.135	0.133	0.124	0.135	0.144	0.143	0.139	0.131	0.134	0.134	0.130	0.123	0.124	0.126	0.126
Peak 8-Hour Indicator	0.118	0.117	0.120	0.119	0.119	0.116	0.116	0.108	0.116	0.120	0.118	0.115	0.111	0.114	0.113	0.113	0.110	0.111	0.114	0.113
4th High 1-Hr. in 3 Yrs	0.130	0.140	0.150	0.150	0.150	0.140	0.140	0.130	0.140	0.150	0.150	0.140	0.132	0.139	0.127	0.129	0.126	0.126	0.124	0.124
Avg. of 4th High 8-Hr. in 3 Yrs	0.105	0.108	0.112	0.111	0.111	0.106	0.104	0.101	0.104	0.106	0.107	0.105	0.101	0.102	0.105	0.105	0.104	0.105	0.107	0.105
Maximum 1-Hr. Concentration	0.140	0.160	0.180	0.150	0.160	0.140	0.130	0.130	0.150	0.154	0.132	0.140	0.125	0.148	0.127	0.129	0.135	0.140	0.129	0.133
Max. 8-Hr. Concentration	0.113	0.121	0.133	0.117	0.121	0.115	0.111	0.106	0.125	0.119	0.112	0.111	0.106	0.122	0.112	0.108	0.111	0.117	0.115	0.103
Days Above State Standard	93	98	121	100	76	63	65	63	76	78	66	81	50	63	84	78	73	86	91	60
Days Above Nat. 1-Hr. Std.	6	13	10	4	10	1	1	2	10	12	3	4	1	6	3	1	2	3	3	1
Days Above Nat. 8-Hr. Std.	96	99	120	97	70	64	66	65	69	82	59	78	54	58	88	76	71	93	92	78

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				145	206	285	177	122	108	105	128	115	96	167	160	136	151	111	99	82
Max. 24-Hr. Concentration (Nat)				141	204	285	175	122	108	104	125	115	96	160	152	130	143	110	100	82
Annual Average (State)									52.8		52.7	44.5	41.6	40.4	55.8	53.7	52.3	52.4	43.0	41.4
Annual Average (Nat)				67.4	66.9	79.2	65.8		52.8	48.2	52.4	44.5	41.5	39.9	54.9	52.7	51.9	51.9	42.6	41.2
Calc Days Above State 24-Hr Std									183		163	148	65	102	182	196	168	179	108	91
Calc Days Above Nat 24-Hr Std				0	12	29	7		0	0	0	0	0	6	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															123.0	105.0	97.0	82.0	58.9	68.6
Max. 24-Hr. Concentration (Nat)															123.0	105.0	97.0	76.0	49.0	60.0
98th Percentile of 24-Hr Conc.															114.0	103.0	96.0	70.0	47.0	54.0
Annual Average (State)																23.9		23.2	19.7	
Avg. of Qtrly. Means (Nat)															27.6	23.9	22.5	23.2	18.2	17.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.5	5.7	5.9	6.1	6.4	6.5	6.5	6.0	5.2	4.4	4.5	4.5	4.2	4.0	4.1	4.1	4.0	3.5	3.0	2.7
Max. 1-Hr. Concentration	9.0	12.0	13.0	14.0	12.0	11.0	14.0	10.0	7.0	8.7	9.3	5.3	7.3	7.4	7.9	5.9	5.7	4.9	4.7	3.7
Max. 8-Hr. Concentration	5.5	6.9	5.8	8.0	6.4	6.7	6.1	4.8	4.0	4.4	4.4	4.0	4.1	3.8	4.1	4.2	3.7	2.9	3.0	2.2
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.120	0.117	0.114	0.118	0.138	0.137	0.130	0.109	0.111	0.113	0.115	0.119	0.115	0.089	0.100	0.098	0.096	0.092	0.096	0.097
Max. 1-Hr. Concentration	0.140	0.110	0.110	0.170	0.210	0.100	0.130	0.100	0.120	0.142	0.112	0.077	0.095	0.081	0.092	0.079	0.075	0.095	0.087	0.078
Max. Annual Average	0.022	0.025	0.019	0.022	0.020	0.021	0.022	0.020	0.023		0.023	0.018	0.019	0.017	0.021	0.018	0.018	0.019	0.018	0.016

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.03	0.04	0.02	0.02															
Max. Annual Average	0.00	0.00	0.00	0.00	0.00															
Max. 24-Hr. Concentration	0.05	0.01	0.02	0.01	0.01															

Table A-93

South Central Coast Air Basin

County: San Luis Obispo

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.101	0.098	0.097	0.099	0.108	0.105	0.104	0.100	0.099	0.096	0.098	0.108	0.109	0.116	0.114	0.114	0.093	0.094	0.094	0.092
Peak 8-Hour Indicator	0.085	0.082	0.083	0.085	0.095	0.091	0.091	0.086	0.081	0.081	0.083	0.095	0.096	0.103	0.099	0.100	0.078	0.081	0.080	0.079
4th High 1-Hr. in 3 Yrs	0.110	0.100	0.100	0.100	0.100	0.100	0.110	0.100	0.100	0.098	0.097	0.107	0.107	0.114	0.113	0.113	0.092	0.092	0.092	0.092
Avg. of 4th High 8-Hr. in 3 Yrs	0.075	0.072	0.072	0.075	0.073	0.075	0.083	0.078	0.075	0.074	0.074	0.080	0.079	0.086	0.082	0.081	0.072	0.073	0.074	0.073
Maximum 1-Hr. Concentration	0.110	0.100	0.130	0.100	0.150	0.100	0.110	0.110	0.100	0.101	0.108	0.141	0.090	0.129	0.099	0.084	0.094	0.093	0.097	0.086
Max. 8-Hr. Concentration	0.088	0.096	0.111	0.086	0.122	0.082	0.101	0.098	0.088	0.089	0.087	0.117	0.077	0.113	0.083	0.080	0.081	0.083	0.089	0.076
Days Above State Standard	3	5	3	6	8	2	4	3	4	2	7	14	0	25	2	0	0	0	2	0
Days Above Nat. 1-Hr. Std.	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	1	3	2	1	8	0	2	1	2	1	1	10	0	21	0	0	0	0	1	0

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				63	63	79	75	135	141	78	73	90	75	55	58	80	70	46	70	64
Max. 24-Hr. Concentration (Nat)				63	84	86	119	135	141	78	73	98	99	70	90	113	89	178	78	146
Annual Average (State)						21.0	24.4	30.4	28.8	22.3	21.4	18.7	20.9	17.7		21.3	21.2	21.1	20.2	20.1
Annual Average (Nat)				22.5	29.2	30.3	26.5	30.4	42.8	22.4	23.0	19.1	24.2	22.3	27.2	21.6	24.8	20.4	24.5	31.4
Calc Days Above State 24-Hr Std						0	6	51	53	6	18	0	7	6		13	12	0	6	0
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															27.5	52.7	57.7	28.0	29.2	30.7
Max. 24-Hr. Concentration (Nat)															27.5	52.7	57.7	28.0	29.2	30.7
98th Percentile of 24-Hr Conc.															27.3	41.0	50.7	25.7	21.7	19.6
Annual Average (State)															9.6		10.1	9.2	8.2	8.3
Avg. of Qtrly. Means (Nat)															9.6	10.3	10.1	9.3	8.2	8.3

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.2	5.2	5.2	4.7	4.9	5.1	4.8	4.2	3.6	3.2	2.9	2.9	2.6	2.6	2.7	2.7	2.7	2.2	2.0	1.8
Max. 1-Hr. Concentration	11.0	10.0	10.0	10.0	10.0	10.0	8.0	8.0	9.0	6.1	5.7	5.0	6.4	4.4	5.3	3.9	8.3	3.5	3.1	2.6
Max. 8-Hr. Concentration	4.7	4.9	3.9	4.3	6.3	4.1	3.3	3.1	3.2	3.2	3.1	2.9	2.6	2.3	3.1	2.4	2.0	2.4	1.5	1.5
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.088	0.089	0.090	0.085	0.085	0.084	0.078	0.074	0.072	0.070	0.070	0.065	0.063	0.064	0.073	0.070	0.069	0.060	0.062	0.061
Max. 1-Hr. Concentration	0.100	0.090	0.080	0.090	0.090	0.070	0.080	0.060	0.070	0.069	0.069	0.060	0.071	0.061	0.070	0.059	0.061	0.060	0.064	0.051
Max. Annual Average	0.017	0.015	0.015	0.016	0.016	0.010	0.011	0.015	0.014	0.014	0.013	0.013	0.012	0.012	0.014	0.012	0.012	0.011	0.009	0.009

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.34	0.32	0.32	0.25	0.16	0.16	0.14	0.13	0.13	0.03	0.16	0.17	0.16	0.16	0.14	0.14	0.14	0.16	0.14	0.13
Max. Annual Average	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.07	0.06	0.03	0.04	0.02	0.09	0.02	0.02	0.05	0.01	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.02	0.02	0.03

Table A-94

South Central Coast Air Basin

County: Santa Barbara

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.142	0.136	0.134	0.129	0.140	0.140	0.137	0.131	0.121	0.123	0.122	0.128	0.122	0.117	0.104	0.103	0.100	0.103	0.105	0.102
Peak 8-Hour Indicator	0.106	0.107	0.105	0.103	0.105	0.109	0.108	0.107	0.101	0.102	0.103	0.107	0.104	0.098	0.091	0.090	0.087	0.090	0.092	0.090
4th High 1-Hr. in 3 Yrs	0.150	0.150	0.140	0.130	0.147	0.153	0.153	0.137	0.123	0.129	0.126	0.130	0.130	0.130	0.108	0.108	0.101	0.101	0.103	0.101
Avg. of 4th High 8-Hr. in 3 Yrs	0.096	0.098	0.095	0.095	0.097	0.099	0.099	0.096	0.091	0.092	0.090	0.094	0.089	0.087	0.082	0.081	0.080	0.082	0.084	0.082
Maximum 1-Hr. Concentration	0.230	0.160	0.185	0.130	0.220	0.165	0.134	0.140	0.135	0.142	0.143	0.134	0.137	0.130	0.135	0.128	0.117	0.113	0.107	0.109
Max. 8-Hr. Concentration	0.140	0.128	0.141	0.102	0.176	0.141	0.113	0.125	0.110	0.116	0.118	0.122	0.108	0.120	0.110	0.087	0.106	0.090	0.102	0.102
Days Above State Standard	15	36	37	43	42	40	38	27	23	23	24	23	10	15	3	6	5	3	7	2
Days Above Nat. 1-Hr. Std.	3	7	4	3	9	4	6	5	1	5	3	4	1	2	1	1	0	0	0	0
Days Above Nat. 8-Hr. Std.	9	26	25	28	28	27	25	17	13	11	16	19	4	6	2	2	3	5	5	2

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				132	119	96	96	89	90	139	129	78	168	75	52	54	68	50	98	52
Max. 24-Hr. Concentration (Nat)				132	119	96	96	89	90	139	129	78	168	73	51	53	66	49	96	52
Annual Average (State)				28.7	33.8	36.9	25.7	32.6	29.3	26.8	25.4	28.6	29.7	26.1	29.5	26.6	27.4	24.3	25.2	24.7
Annual Average (Nat)				33.6	33.8	36.6	36.8	32.6	29.4	32.5	31.1	28.6	29.8	25.0	28.5	25.8	26.5	23.5	24.4	24.1
Calc Days Above State 24-Hr Std				19	26	25	6	57	41	7	13	18	12	18	12	18	18	0	6	6
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															24.3	28.7	43.2	21.3	24.0	27.5
Max. 24-Hr. Concentration (Nat)															24.3	28.7	43.2	21.3	24.0	27.5
98th Percentile of 24-Hr Conc.																	23.4	19.4	16.1	12.9
Annual Average (State)																	10.4	9.5	8.6	7.5
Avg. of Qtrly. Means (Nat)																	10.4	9.6	8.6	7.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	10.2	9.9	10.1	9.0	8.8	8.2	7.5	6.4	5.5	5.9	6.0	5.8	5.0	4.8	4.5	4.7	1.6	1.7	2.4	2.1
Max. 1-Hr. Concentration	17.0	18.0	14.0	15.0	11.0	11.0	9.0	12.0	9.0	10.7	7.8	12.6	8.2	8.5	8.2	5.8	5.4	3.4	5.9	4.7
Max. 8-Hr. Concentration	10.5	8.6	7.5	7.4	7.4	5.8	6.4	5.9	4.8	6.5	5.8	4.9	4.1	4.6	4.2	3.1	1.9	1.8	2.3	1.9
Days Above State 8-Hr. Std.	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.116	0.113	0.108	0.094	0.119	0.119	0.120	0.104	0.099	0.089	0.091	0.091	0.085	0.081	0.078	0.081	0.058	0.052	0.063	0.058
Max. 1-Hr. Concentration	0.160	0.150	0.140	0.160	0.120	0.110	0.160	0.100	0.090	0.100	0.113	0.107	0.065	0.089	0.096	0.124	0.113	0.063	0.059	0.063
Max. Annual Average	0.030	0.022	0.017	0.012	0.027	0.015	0.024	0.022	0.022	0.022	0.021	0.019	0.019	0.021	0.022	0.012	0.010	0.011	0.011	0.013

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.05	0.08	0.08	0.07	0.07	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Max. Annual Average	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.04	0.04	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00

Table A-95

South Central Coast Air Basin

County: Ventura

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.181	0.177	0.172	0.176	0.173	0.172	0.164	0.159	0.157	0.147	0.162	0.161	0.153	0.143	0.135	0.132	0.126	0.125	0.124	0.118
Peak 8-Hour Indicator	0.145	0.147	0.146	0.144	0.142	0.144	0.141	0.133	0.133	0.120	0.132	0.134	0.133	0.123	0.114	0.112	0.107	0.106	0.104	0.101
4th High 1-Hr. in 3 Yrs	0.190	0.180	0.180	0.180	0.170	0.170	0.170	0.150	0.150	0.146	0.157	0.158	0.152	0.144	0.134	0.132	0.128	0.124	0.124	0.118
Avg. of 4th High 8-Hr. in 3 Yrs	0.132	0.131	0.129	0.131	0.132	0.130	0.127	0.118	0.115	0.112	0.117	0.119	0.115	0.112	0.106	0.105	0.101	0.097	0.095	0.094
Maximum 1-Hr. Concentration	0.200	0.180	0.180	0.180	0.230	0.170	0.170	0.150	0.146	0.164	0.169	0.158	0.134	0.174	0.132	0.128	0.129	0.132	0.130	0.122
Max. 8-Hr. Concentration	0.156	0.145	0.153	0.142	0.166	0.143	0.140	0.123	0.129	0.132	0.144	0.127	0.114	0.151	0.112	0.108	0.113	0.109	0.114	0.098
Days Above State Standard	136	149	123	135	116	99	107	68	58	88	90	80	59	41	33	38	34	22	41	22
Days Above Nat. 1-Hr. Std.	44	59	31	55	46	18	33	10	13	17	23	17	2	5	2	1	2	1	2	0
Days Above Nat. 8-Hr. Std.	111	120	88	110	94	70	92	57	46	64	67	65	46	30	23	30	24	15	31	17

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				118	92	133	90	84	118	86	94	93	321	111	86	102	77	100	169	69
Max. 24-Hr. Concentration (Nat)				118	92	133	90	84	118	78	94	93	321	110	84	100	78	97	149	69
Annual Average (State)				40.3	41.6	36.1	40.0	33.0	29.1	31.6	30.9	29.3	36.5	24.4	28.8	31.2	28.8	28.6	30.0	28.8
Annual Average (Nat)				41.6	41.5	36.1	39.9	33.2	29.1	30.5	28.4	29.3	37.0	24.4	31.3	31.0	31.5	28.9	30.7	28.1
Calc Days Above State 24-Hr Std				102	139	66	99	43	30	24	57	29	47	12	13	39	18	19	31	7
Calc Days Above Nat 24-Hr Std				0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															64.6	55.3	50.0	46.4	116.0	91.9
Max. 24-Hr. Concentration (Nat)															64.6	55.3	50.0	46.4	116.0	41.2
98th Percentile of 24-Hr Conc.															35.4		40.0	35.2	33.4	36.7
Annual Average (State)																	14.9		12.4	12.5
Avg. of Qtrly. Means (Nat)															13.8		14.9	14.6	14.2	12.6

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.9	6.2	5.7	5.7	4.9	4.9	4.7	4.5	3.9	3.6	4.0	4.0	3.9	3.6	3.3	3.4	3.1	2.7	2.7	2.4
Max. 1-Hr. Concentration	12.0	15.0	12.0	9.0	10.0	10.0	9.0	7.0	9.0	7.7	8.9	7.8	7.4	7.2	6.8	6.2	4.4	5.7	7.2	4.2
Max. 8-Hr. Concentration	6.0	7.0	5.7	4.4	4.1	5.0	4.3	3.0	3.7	4.2	4.3	3.4	3.8	3.5	3.6	4.3	3.4	2.3	3.7	2.6
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.136	0.132	0.130	0.123	0.117	0.119	0.120	0.114	0.104	0.104	0.112	0.114	0.110	0.097	0.089	0.086	0.083	0.079	0.073	0.069
Max. 1-Hr. Concentration	0.120	0.130	0.150	0.110	0.120	0.160	0.110	0.100	0.110	0.133	0.127	0.110	0.115	0.097	0.099	0.095	0.080	0.064	0.103	0.071
Max. Annual Average		0.015	0.016	0.024	0.027	0.025	0.024	0.012	0.023	0.020	0.024	0.015	0.020	0.019	0.017	0.020	0.019	0.017	0.015	0.014

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00

Table A-96

South Coast Air Basin

County: Los Angeles

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.375	0.360	0.344	0.319	0.320	0.310	0.304	0.286	0.297	0.279	0.249	0.230	0.229	0.217	0.193	0.193	0.164	0.171	0.176	0.175
Peak 8-Hour Indicator	0.252	0.251	0.243	0.230	0.213	0.212	0.210	0.200	0.200	0.192	0.174	0.165	0.163	0.157	0.140	0.140	0.129	0.140	0.146	0.143
4th High 1-Hr. in 3 Yrs	0.360	0.350	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.223	0.209	0.200	0.188	0.188	0.169	0.169	0.180	0.171
Avg. of 4th High 8-Hr. in 3 Yrs	0.226	0.222	0.217	0.205	0.192	0.186	0.179	0.177	0.177	0.168	0.156	0.145	0.135	0.133	0.118	0.115	0.112	0.121	0.126	0.125
Maximum 1-Hr. Concentration	0.390	0.350	0.330	0.340	0.340	0.290	0.320	0.300	0.280	0.300	0.216	0.205	0.170	0.222	0.154	0.174	0.190	0.169	0.194	0.158
Max. 8-Hr. Concentration	0.288	0.251	0.210	0.258	0.235	0.177	0.183	0.218	0.185	0.208	0.158	0.150	0.130	0.171	0.108	0.146	0.134	0.144	0.152	0.133
Days Above State Standard	201	209	190	205	192	168	159	174	158	142	127	109	89	68	43	57	70	86	101	80
Days Above Nat. 1-Hr. Std.	154	162	147	165	140	120	111	129	102	102	79	55	27	35	6	12	17	36	47	17
Days Above Nat. 8-Hr. Std.	164	177	158	181	150	131	128	139	108	118	92	68	43	46	19	27	35	56	80	59

PM_{10} (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				149	172	161	151	222	104	127	157	138	116	87	103	105	106	121	117	83
Max. 24-Hr. Concentration (Nat)				149	172	161	151	222	104	127	157	138	116	87	103	105	106	121	119	83
Annual Average (State)					63.8	54.9	54.9	48.7	47.4	45.3	48.6	45.4	46.1	37.8	56.3	40.0	44.2	37.2	43.1	38.1
Annual Average (Nat)				63.1	63.8	55.0	65.9	48.8	47.4	45.3	47.7	45.5	46.1	40.6	56.3	46.3	45.3	45.8	44.4	38.1
Calc Days Above State 24-Hr Std					249	187	183	146	155	145	143	153	149	67	213	92	119	71	118	76
Calc Days Above Nat 24-Hr Std				0	6	6	0	11	0	0	6	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m³)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															85.6	92.5	104.0	80.2	121.2	75.6
Max. 24-Hr. Concentration (Nat)															85.6	92.5	94.7	72.4	121.2	75.6
98th Percentile of 24-Hr Conc.															53.2	83.0	69.4	57.9	61.3	66.3
Annual Average (State)																24.0	24.8	24.0	20.3	16.6
Avg. of Qtrly. Means (Nat)															25.7	24.0	25.2	24.0	22.1	20.0

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	21.1	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3
Max. 1-Hr. Concentration	33.0	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.5	11.7	15.8	12.2	10.4
Max. 8-Hr. Concentration	27.7	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5
Days Above State 8-Hr. Std.	62	57	50	70	70	49	51	39	29	27	17	26	18	13	11	6	0	1	0	0
Days Above Nat. 8-Hr. Std.	53	49	40	63	67	41	41	34	19	19	14	19	13	10	7	3	0	1	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.317	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.180	0.168	0.166	0.162	0.157	0.150
Max. 1-Hr. Concentration	0.350	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.170	0.212	0.173	0.251	0.262	0.163	0.157
Max. Annual Average	0.060	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.10	0.09	0.07	0.07	0.06	0.06	0.06	0.11	0.10	0.10	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03
Max. Annual Average	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Max. 24-Hr. Concentration	0.04	0.04	0.02	0.04	0.02	0.04	0.02	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02

Table A-97

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

South Coast Air Basin

County: Orange

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.295	0.274	0.267	0.246	0.235	0.227	0.219	0.205	0.197	0.189	0.163	0.156	0.137	0.141	0.131	0.131	0.113	0.117	0.124	0.124
Peak 8-Hour Indicator	0.195	0.181	0.174	0.163	0.159	0.154	0.145	0.139	0.133	0.134	0.120	0.112	0.101	0.101	0.094	0.095	0.094	0.092	0.096	0.097
4th High 1-Hr. in 3 Yrs	0.280	0.270	0.260	0.240	0.240	0.240	0.220	0.210	0.190	0.190	0.170	0.156	0.138	0.144	0.130	0.127	0.114	0.119	0.131	0.131
Avg. of 4th High 8-Hr. in 3 Yrs	0.166	0.157	0.152	0.142	0.141	0.138	0.127	0.120	0.114	0.117	0.107	0.100	0.088	0.088	0.084	0.084	0.080	0.080	0.086	0.087
Maximum 1-Hr. Concentration	0.340	0.250	0.240	0.290	0.260	0.210	0.250	0.220	0.190	0.252	0.160	0.150	0.134	0.182	0.116	0.137	0.125	0.136	0.165	0.120
Max. 8-Hr. Concentration	0.208	0.158	0.165	0.195	0.167	0.142	0.145	0.158	0.122	0.172	0.109	0.103	0.100	0.115	0.091	0.110	0.097	0.093	0.105	0.097
Days Above State Standard	101	101	81	96	81	80	71	63	59	46	39	27	13	22	8	14	12	9	19	23
Days Above Nat. 1-Hr. Std.	63	53	42	45	38	37	32	35	17	9	4	6	3	6	0	2	1	2	5	0
Days Above Nat. 8-Hr. Std.	66	62	54	50	44	39	36	35	25	15	8	9	3	6	1	6	4	1	10	12

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				88	88	158	146	88	115	106	172	101	91	81	122	126	93	78	96	74
Max. 24-Hr. Concentration (Nat)				132	138	158	146	88	115	106	172	101	91	81	122	126	93	80	96	74
Annual Average (State)					41.7		45.5	34.4	38.3	37.5	43.3	35.2	38.8	35.8	36.7	39.9	26.4	33.5	32.8	34.0
Annual Average (Nat)				46.0	46.9	48.1	45.9	40.0	38.3	37.5	43.5	35.2	38.8	35.8	36.7	39.6	26.5	33.5	32.8	33.9
Calc Days Above State 24-Hr Std					122		89	31	78	67	86	37	66	72	37	48	18	30	38	42
Calc Days Above Nat 24-Hr Std				0	0	6	0	0	0	0	7	0	0	0	0	0	0	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															68.6	113.9	70.8	68.6	115.5	58.9
Max. 24-Hr. Concentration (Nat)															68.6	113.9	70.8	68.6	115.5	58.9
98th Percentile of 24-Hr Conc.																66.3	45.6	48.1	51.8	48.2
Annual Average (State)																14.7		18.6		
Avg. of Qtrly. Means (Nat)																20.3	15.8	18.6	17.3	16.8

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	11.6	11.0	11.3	10.9	11.5	11.5	10.8	9.4	8.8	8.7	8.2	8.5	7.3	6.7	6.4	6.7	6.6	5.8	4.6	4.4
Max. 1-Hr. Concentration	22.0	20.0	21.0	20.0	24.0	19.0	21.0	21.0	15.0	16.1	12.7	12.9	11.9	15	11.4	13.8	10.7	10.2	8.4	7.4
Max. 8-Hr. Concentration	17.0	10.4	10.6	12.0	12.1	11.7	8.6	9.4	7.7	8.6	8.0	7.4	6	7.1	6.4	6.7	4.7	5.3	5.9	4.1
Days Above State 8-Hr. Std.	9	4	3	9	13	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	7	4	2	7	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.252	0.236	0.240	0.238	0.241	0.235	0.231	0.221	0.220	0.201	0.196	0.188	0.171	0.141	0.143	0.149	0.150	0.124	0.129	0.119
Max. 1-Hr. Concentration	0.300	0.210	0.220	0.280	0.280	0.220	0.200	0.210	0.200	0.230	0.192	0.160	0.145	0.135	0.165	0.139	0.130	0.116	0.158	0.122
Max. Annual Average	0.043	0.045	0.042	0.046	0.047	0.047	0.045	0.039	0.039	0.041	0.039	0.035	0.033	0.034	0.035	0.029	0.027	0.024	0.028	0.025

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01

Table A-98

South Coast Air Basin

County: Riverside

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.332	0.308	0.297	0.276	0.269	0.263	0.261	0.251	0.240	0.222	0.207	0.192	0.188	0.188	0.176	0.171	0.154	0.154	0.158	0.156
Peak 8-Hour Indicator	0.228	0.207	0.209	0.205	0.206	0.198	0.196	0.194	0.189	0.170	0.162	0.151	0.146	0.150	0.143	0.141	0.130	0.125	0.131	0.131
4th High 1-Hr. in 3 Yrs	0.330	0.320	0.290	0.270	0.270	0.270	0.270	0.250	0.240	0.240	0.220	0.200	0.187	0.187	0.170	0.166	0.149	0.149	0.157	0.157
Avg. of 4th High 8-Hr. in 3 Yrs	0.209	0.197	0.191	0.180	0.180	0.177	0.175	0.169	0.165	0.157	0.149	0.140	0.135	0.129	0.124	0.114	0.111	0.113	0.118	0.117
Maximum 1-Hr. Concentration	0.350	0.270	0.290	0.280	0.270	0.290	0.240	0.260	0.260	0.253	0.213	0.203	0.187	0.195	0.144	0.164	0.152	0.160	0.169	0.156
Max. 8-Hr. Concentration	0.230	0.217	0.186	0.241	0.213	0.181	0.196	0.193	0.195	0.208	0.161	0.162	0.148	0.169	0.123	0.126	0.135	0.130	0.146	0.116
Days Above State Standard	177	174	175	191	182	150	155	159	157	144	134	107	128	80	83	93	97	93	102	84
Days Above Nat. 1-Hr. Std.	132	118	125	133	119	97	99	99	86	90	69	50	40	40	9	23	28	22	37	14
Days Above Nat. 8-Hr. Std.	159	146	151	152	148	122	132	135	124	127	99	84	106	65	56	70	73	67	85	62

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				252	252	250	179	126	231	161	219	162	163	116	153	139	219	126	159	133
Max. 24-Hr. Concentration (Nat)				252	252	250	179	126	231	161	219	162	163	116	153	139	219	130	164	137
Annual Average (State)					94.0	78.2	76.0	62.0	72.5	65.5	68.8	61.5	65.3		72.2	60.1	62.9	56.2	55.1	53.5
Annual Average (Nat)				94.5	93.0	78.2	76.1	62.6	72.5	65.5	68.8	62.8	65.6	46.2	72.2	59.1	63.3	58.1	55.6	54.8
Calc Days Above State 24-Hr Std					305	275	250	233	251	244	226	251	257		261	248	240	228	201	210
Calc Days Above Nat 24-Hr Std				30	34	18	12	0	18	6	25	6	6	0	0	0	6	0	6	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															111.2	119.6	98.0	77.6	104.3	93.8
Max. 24-Hr. Concentration (Nat)															111.2	119.6	98.0	77.6	104.3	93.8
98th Percentile of 24-Hr Conc.															78.7	77.1	74.3	66.3	76.6	59.5
Annual Average (State)																			24.8	
Avg. of Qtrly. Means (Nat)															31.0	28.3	31.0	27.4	24.8	22.1

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	7.9	8.4	8.7	8.7	8.5	8.1	8.0	6.9	6.6	6.3	6.2	6.2	5.9	5.3	4.7	4.7	4.4	4.7	3.9	3.3
Max. 1-Hr. Concentration	14.0	18.0	13.0	17.0	14.0	15.0	14.0	11.0	10.0	11.0	9.0	9.1	10.7	6.4	7.4	8.8	5.8	6.5	4.6	4.3
Max. 8-Hr. Concentration	9.1	8.3	7.6	10.0	10.3	7.3	7.4	6.1	7.1	7.3	6.3	5.3	5.6	4.8	4.4	4.2	4.5	3.8	3.7	3.0
Days Above State 8-Hr. Std.	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.162	0.160	0.163	0.170	0.176	0.174	0.172	0.168	0.159	0.138	0.134	0.133	0.127	0.167	0.185	0.213	0.216	0.200	0.161	0.109
Max. 1-Hr. Concentration	0.160	0.160	0.210	0.190	0.160	0.160	0.210	0.230	0.140	0.181	0.147	0.110	0.200	0.255	0.307	0.214	0.237	0.149	0.099	0.092
Max. Annual Average	0.035	0.032	0.027		0.036	0.034	0.035	0.030		0.031	0.030	0.029	0.026	0.017	0.025	0.022	0.024	0.017	0.021	0.017

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.02	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.01	0.00	0.01	0.02

Table A-99

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

South Coast Air Basin

County: San Bernardino

OZONE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hour Indicator	0.330	0.321	0.304	0.284	0.277	0.273	0.265	0.266	0.252	0.252	0.232	0.233	0.222	0.224	0.211	0.213	0.172	0.172	0.178	0.167
Peak 8-Hour Indicator	0.232	0.238	0.227	0.211	0.204	0.202	0.198	0.200	0.200	0.187	0.186	0.175	0.168	0.182	0.179	0.178	0.144	0.144	0.144	0.144
4th High 1-Hr. in 3 Yrs	0.320	0.320	0.320	0.290	0.280	0.280	0.270	0.270	0.250	0.250	0.234	0.231	0.215	0.217	0.211	0.211	0.170	0.169	0.167	0.163
Avg. of 4th High 8-Hr. in 3 Yrs	0.211	0.211	0.200	0.195	0.188	0.185	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127
Maximum 1-Hr. Concentration	0.340	0.310	0.290	0.350	0.320	0.330	0.290	0.280	0.270	0.265	0.256	0.239	0.205	0.244	0.174	0.184	0.184	0.161	0.176	0.163
Max. 8-Hr. Concentration	0.252	0.240	0.198	0.250	0.252	0.193	0.203	0.211	0.185	0.192	0.203	0.173	0.143	0.206	0.142	0.149	0.144	0.139	0.153	0.145
Days Above State Standard	184	179	179	193	192	161	160	176	170	158	135	132	122	100	98	101	99	94	106	88
Days Above Nat. 1-Hr. Std.	138	145	141	153	143	115	109	123	112	115	91	79	53	58	37	25	32	30	50	16
Days Above Nat. 8-Hr. Std.	166	167	163	174	169	145	143	164	157	142	110	110	93	88	87	75	79	85	86	73

PM_{10} (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)				287	271	475	163	649	143	147	178	136	208	114	183	124	166	98	145	114
Max. 24-Hr. Concentration (Nat)				289	271	475	163	649	143	147	178	136	208	114	183	124	166	102	149	118
Annual Average (State)					79.7	77.3	68.5	79.0	58.2	60.0	60.8	54.9	53.6	50.2	60.1	52.6	52.4	48.2	43.2	46.9
Annual Average (Nat)				81.3	79.7	77.3	68.5	79.0	58.3	59.9	60.8	54.9	53.6	50.2	65.8	52.6	52.2	50.1	44.9	48.6
Calc Days Above State 24-Hr Std					293	265	250	243	231	232	209	211	174	171	223	195	208	194	129	158
Calc Days Above Nat 24-Hr Std				19	18	19	6	12	0	0	21	0	6	0	6	0	6	0	0	0

$PM_{2.5}$ (ug/m^3)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Max. 24-Hr. Concentration (State)															121.4	89.8	78.5	82.1	98.1	93.4
Max. 24-Hr. Concentration (Nat)															121.4	89.8	78.5	82.1	98.1	93.4
98th Percentile of 24-Hr Conc.															85.6	70.3	69.5	66.3	66.9	72.4
Annual Average (State)																	25.0	25.8	23.8	
Avg. of Qtrly. Means (Nat)															25.7	25.9	26.5	25.8	23.8	21.9

CARBON MONOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 8-Hr. Indicator	5.8	7.2	7.1	7.5	7.8	7.7	7.4	6.7	6.1	5.5	6.4	6.3	6.1	5.1	4.9	4.9	4.1	3.5	3.6	3.5
Max. 1-Hr. Concentration	10.0	9.0	11.0	9.0	11.0	9.0	8.0	7.0	7.0	7.6	7.7	5.8	7.6	6.3	5.5	4.8	4.1	4.5	5.1	4.1
Max. 8-Hr. Concentration	6.3	6.7	6.7	7.6	8.1	6.6	7.0	5.9	6.0	6.4	6.3	4.5	5.9	4.7	4.1	4.1	3.3	3.2	4.5	3.2
Days Above State 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Days Above Nat. 8-Hr. Std.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NITROGEN DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.171	0.172	0.183	0.193	0.195	0.192	0.187	0.174	0.167	0.160	0.178	0.180	0.178	0.143	0.139	0.137	0.131	0.123	0.125	0.118
Max. 1-Hr. Concentration	0.180	0.240	0.200	0.210	0.200	0.200	0.210	0.140	0.160	0.177	0.199	0.163	0.153	0.154	0.149	0.143	0.129	0.122	0.117	0.118
Max. Annual Average	0.040	0.042	0.047	0.047	0.045	0.041	0.043	0.040	0.042	0.041	0.046	0.038	0.036	0.036	0.039	0.038	0.037	0.036	0.034	0.031

SULFUR DIOXIDE (ppm)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Peak 1-Hr. Indicator	0.04	0.05	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Max. Annual Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. 24-Hr. Concentration	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00

Table A-100

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX B

Air Quality Trend Data by Pollutant:

Ozone, PM_{10}, $PM_{2.5}$ CO, NO_2, NO_x, SO_2

Appendix B: *Air Quality Trend Data by Pollutant: Ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, NO_x, SO_2*

List of Tables

List of Tables (continued)

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Introduction

This appendix contains air quality trend data for each of California's 15 air basins, organized by pollutant. The seven pollutants included are ozone, particulate matter (PM_{10} & $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), oxides of nitrogen (NO_x), and sulfur dioxide (SO_2). The statistics are the same as those presented in Chapter 4, and the time period covered is 1985 through 2004 for ozone, CO, NO_2, NO_x, and SO_2, 1988 through 2004 for PM_{10}. and 1999 to 2004 for $PM_{2.5}$.

Air quality statistics can fluctuate from year-to-year because of the influence of meteorology and/or changes in emissions. However, the statistics can also vary because of a change in monitoring site. The peak and maximum value statistics listed here reflect the highest value for the statistic at any site in the area. As a result, the statistic may not reflect the same site during the entire trend period. For example, the maximum 8-hour carbon monoxide concentrations in Imperial County in the Salton Sea Air Basin are below the levels of the State and national standards from 1984 through 1993. In 1994, however, the concentrations show a significant increase, and both the State and national standards are violated. The CO concentrations in the Salton Sea Air Basin did not suddenly increase during 1994. Instead, monitoring began at a new site in Calexico, and the concentrations at the new site were higher than at the existing sites in the air basin. Information about the time periods for which air quality data are available for different pollutants at sites in California and Baja, Mexico is available on the web at *www.arb.ca.gov/aqd/namslams/namslams.htm*.

Since the peak and maximum air quality statistics reflect the highest values in the area, the monitoring sites represented also may not be consistent among the various statistics during a particular year. For example, the monitoring site reflected in the maximum 1-hour ozone concentration may not be the same as the monitoring site reflected in the maximum 8-hour ozone concentration. In contrast to the peak and maximum statistics, the counts of days above a standard reflect composite, basinwide values (in other words, a count of the total number of days an exceedance occurred at any site in the air basin).

Ozone

Peak 1-Hour Indicator (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.094	0.100	0.099	0.100	0.099	0.100	0.099	0.115	0.110	0.108	0.097	0.099	0.096	0.095	0.090	0.090	0.104	0.105	0.091	0.090
LAKE COUNTY	0.075	0.081	0.081	0.080	0.083	0.074	0.075	0.077	0.077	0.083	0.082	0.082	0.076	0.076	0.087	0.083	0.080	0.081	0.080	0.081
LAKE TAHOE	0.081	0.082	0.085	0.089	0.091	0.091	0.093	0.089	0.079	0.082	0.084	0.084	0.083	0.082	0.081	0.089	0.090	0.093	0.091	0.089
MOJAVE DESERT	0.200	0.235	0.231	0.234	0.204	0.215	0.223	0.220	0.193	0.191	0.194	0.186	0.171	0.176	0.162	0.154	0.136	0.140	0.138	0.139
MOUNTAIN COUNTIES		0.090	0.129	0.155	0.138	0.134	0.118	0.127	0.122	0.127	0.131	0.137	0.140	0.147	0.144	0.144	0.137	0.143	0.146	0.143
NORTH CENTRAL COAST	0.113	0.109	0.146	0.136	0.131	0.115	0.114	0.115	0.111	0.107	0.106	0.111	0.112	0.113	0.103	0.104	0.100	0.104	0.104	0.103
NORTH COAST	0.073	0.074	0.083	0.062	0.058	0.066	0.063	0.085	0.088	0.089	0.090	0.088	0.091	0.103	0.109	0.105	0.093	0.083	0.082	0.082
NORTHEAST PLATEAU	0.076	0.078	0.081	0.082	0.083	0.082	0.084	0.081	0.073	0.075	0.074	0.075	0.074	0.078	0.078	0.081	0.08	0.085	0.083	0.082
SACRAMENTO VALLEY	0.173	0.173	0.168	0.171	0.166	0.162	0.153	0.158	0.159	0.148	0.149	0.154	0.141	0.161	0.155	0.153	0.138	0.135	0.137	0.134
SALTON SEA	0.204	0.197	0.185	0.182	0.180	0.181	0.175	0.168	0.159	0.154	0.163	0.155	0.156	0.153	0.147	0.149	0.152	0.142	0.135	0.131
SAN DIEGO	0.188	0.179	0.179	0.179	0.186	0.180	0.172	0.164	0.150	0.147	0.148	0.142	0.132	0.134	0.134	0.132	0.117	0.117	0.117	0.112
SAN FRANCISCO BAY AREA	0.172	0.155	0.149	0.147	0.148	0.136	0.129	0.130	0.126	0.118	0.135	0.151	0.149	0.151	0.144	0.143	0.122	0.126	0.129	0.126
SAN JOAQUIN VALLEY	0.162	0.172	0.172	0.169	0.170	0.164	0.167	0.162	0.162	0.155	0.163	0.164	0.167	0.162	0.159	0.158	0.146	0.151	0.151	0.151
SOUTH CENTRAL COAST	0.181	0.177	0.172	0.176	0.173	0.172	0.164	0.159	0.157	0.147	0.162	0.161	0.153	0.143	0.135	0.132	0.126	0.125	0.124	0.118
SOUTH COAST	0.375	0.360	0.344	0.319	0.320	0.310	0.304	0.286	0.297	0.279	0.249	0.233	0.229	0.224	0.211	0.213	0.172	0.172	0.178	0.175

Table B-1

Peak 8-Hour Indicator (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.088	0.095	0.094	0.092	0.092	0.093	0.091	0.097	0.093	0.092	0.086	0.087	0.085	0.087	0.085	0.085	0.091	0.091	0.084	0.083
LAKE COUNTY	0.067	0.072	0.075	0.076	0.072	0.060	0.064	0.064	0.066	0.071	0.071	0.071	0.064	0.065	0.075	0.073	0.071	0.073	0.071	0.071
LAKE TAHOE	0.072	0.074	0.078	0.080	0.081	0.081	0.082	0.081	0.068	0.074	0.075	0.076	0.073	0.075	0.074	0.078	0.079	0.08	0.081	0.079
MOJAVE DESERT	0.164	0.200	0.191	0.189	0.161	0.170	0.170	0.166	0.155	0.148	0.158	0.147	0.145	0.145	0.133	0.124	0.114	0.116	0.118	0.117
MOUNTAIN COUNTIES		0.082	0.106	0.122	0.120	0.114	0.108	0.109	0.109	0.109	0.112	0.116	0.113	0.119	0.119	0.120	0.113	0.119	0.122	0.121
NORTH CENTRAL COAST	0.090	0.088	0.115	0.109	0.105	0.092	0.092	0.093	0.093	0.087	0.087	0.094	0.094	0.096	0.09	0.089	0.085	0.088	0.089	0.089
NORTH COAST	0.056	0.061	0.070	0.053	0.050	0.061	0.059	0.068	0.072	0.072	0.074	0.074	0.079	0.087	0.092	0.089	0.078	0.069	0.068	0.067
NORTHEAST PLATEAU	0.068	0.071	0.075	0.074	0.075	0.075	0.075	0.073	0.067	0.067	0.064	0.064	0.066	0.070	0.069	0.070	0.068	0.071	0.073	0.072
SACRAMENTO VALLEY	0.131	0.133	0.129	0.129	0.128	0.126	0.122	0.124	0.125	0.116	0.120	0.124	0.117	0.125	0.124	0.118	0.112	0.113	0.111	0.113
SALTON SEA	0.154	0.153	0.148	0.141	0.142	0.139	0.139	0.133	0.131	0.127	0.125	0.122	0.120	0.122	0.114	0.112	0.110	0.118	0.119	0.116
SAN DIEGO	0.145	0.140	0.136	0.130	0.135	0.139	0.135	0.129	0.122	0.118	0.121	0.117	0.113	0.114	0.112	0.112	0.101	0.103	0.101	0.098
SAN FRANCISCO BAY AREA	0.130	0.121	0.114	0.111	0.112	0.104	0.098	0.096	0.094	0.093	0.103	0.112	0.110	0.110	0.107	0.109	0.094	0.096	0.098	0.096
SAN JOAQUIN VALLEY	0.124	0.128	0.134	0.134	0.131	0.126	0.128	0.122	0.124	0.123	0.128	0.130	0.135	0.131	0.127	0.129	0.119	0.12	0.122	0.122
SOUTH CENTRAL COAST	0.145	0.147	0.146	0.144	0.142	0.144	0.141	0.133	0.133	0.120	0.132	0.134	0.133	0.123	0.114	0.112	0.107	0.106	0.104	0.101
SOUTH COAST	0.252	0.251	0.243	0.230	0.213	0.212	0.210	0.200	0.200	0.192	0.186	0.175	0.168	0.182	0.179	0.178	0.144	0.144	0.146	0.144

Table B-2

Ozone

4th Highest 1-Hour Concentration in 3 Years (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.090	0.100	0.100	0.100	0.100	0.100	0.090	0.120	0.120	0.120	0.100	0.100	0.091	0.090	0.089	0.090	0.097	0.097	0.092	0.088
LAKE COUNTY	0.070	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
LAKE TAHOE	0.080	0.080	0.090	0.090	0.090	0.090	0.090	0.090	0.070	0.081	0.086	0.083	0.083	0.081	0.081	0.086	0.087	0.089	0.088	0.088
MOJAVE DESERT	0.220	0.230	0.230	0.230	0.210	0.220	0.230	0.230	0.200	0.190	0.188	0.182	0.175	0.167	0.166	0.164	0.135	0.143	0.138	0.138
MOUNTAIN COUNTIES		0.080	0.116	0.140	0.140	0.140	0.110	0.120	0.120	0.124	0.124	0.129	0.130	0.143	0.144	0.143	0.128	0.143	0.143	0.142
NORTH CENTRAL COAST	0.100	0.100	0.134	0.134	0.139	0.120	0.110	0.110	0.110	0.110	0.104	0.114	0.114	0.114	0.109	0.107	0.100	0.104	0.106	0.104
NORTH COAST	0.070	0.070	0.080	0.080	0.059	0.060	0.060	0.080	0.090	0.090	0.090	0.090	0.090	0.110	0.110	0.110	0.100	0.083	0.083	0.083
NORTHEAST PLATEAU	0.070	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.070	0.070	0.070	0.070	0.070	0.075	0.075	0.078	0.078	0.081	0.079	0.079
SACRAMENTO VALLEY	0.180	0.180	0.160	0.160	0.160	0.160	0.150	0.150	0.150	0.143	0.145	0.145	0.133	0.148	0.148	0.148	0.133	0.132	0.138	0.138
SALTON SEA	0.190	0.190	0.180	0.180	0.180	0.180	0.180	0.170	0.170	0.152	0.180	0.180	0.160	0.155	0.143	0.157	0.166	0.147	0.142	0.131
SAN DIEGO	0.210	0.190	0.180	0.180	0.190	0.190	0.170	0.170	0.154	0.150	0.146	0.141	0.138	0.135	0.135	0.131	0.118	0.118	0.118	0.115
SAN FRANCISCO BAY AREA	0.160	0.150	0.140	0.140	0.140	0.130	0.130	0.120	0.120	0.121	0.138	0.138	0.138	0.138	0.139	0.139	0.126	0.124	0.123	0.123
SAN JOAQUIN VALLEY	0.160	0.170	0.170	0.170	0.170	0.160	0.160	0.160	0.160	0.160	0.165	0.165	0.164	0.161	0.161	0.161	0.146	0.151	0.151	0.151
SOUTH CENTRAL COAST	0.190	0.180	0.180	0.180	0.170	0.170	0.170	0.150	0.150	0.146	0.157	0.158	0.152	0.144	0.134	0.132	0.128	0.124	0.124	0.118
SOUTH COAST	0.360	0.350	0.350	0.340	0.330	0.330	0.310	0.300	0.300	0.280	0.250	0.231	0.215	0.217	0.211	0.211	0.170	0.169	0.180	0.171

Table B-3

Average of 4th Highest 8-Hour Concentration in 3 Years (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.079	0.082	0.084	0.086	0.081	0.081	0.076	0.081	0.078	0.082	0.079	0.079	0.077	0.079	0.079	0.080	0.083	0.081	0.081	0.080
LAKE COUNTY	0.059	0.064	0.065	0.065	0.058	0.054	0.055	0.055	0.057	0.059	0.061	0.060	0.058	0.057	0.061	0.062	0.063	0.064	0.064	0.065
LAKE TAHOE	0.068	0.069	0.071	0.074	0.076	0.075	0.076	0.075	0.056	0.061	0.070	0.071	0.068	0.069	0.069	0.074	0.075	0.075	0.076	0.075
MOJAVE DESERT	0.150	0.168	0.163	0.165	0.153	0.151	0.151	0.147	0.139	0.138	0.137	0.131	0.124	0.127	0.118	0.110	0.102	0.106	0.106	0.107
MOUNTAIN COUNTIES		0.073	0.093	0.108	0.103	0.094	0.092	0.098	0.096	0.099	0.099	0.103	0.099	0.103	0.103	0.107	0.104	0.106	0.107	0.102
NORTH CENTRAL COAST	0.081	0.078	0.103	0.095	0.090	0.084	0.083	0.084	0.083	0.081	0.081	0.085	0.084	0.086	0.082	0.082	0.079	0.081	0.081	0.081
NORTH COAST	0.050	0.052	0.056	0.066	0.042	0.053	0.051	0.063	0.065	0.066	0.069	0.069	0.072	0.077	0.082	0.076	0.069	0.063	0.062	0.061
NORTHEAST PLATEAU	0.061	0.064	0.069	0.069	0.069	0.067	0.059	0.057	0.051	0.058	0.057	0.059	0.058	0.061	0.062	0.063	0.053	0.055	0.057	0.065
SACRAMENTO VALLEY	0.118	0.118	0.114	0.114	0.114	0.107	0.105	0.105	0.110	0.104	0.106	0.106	0.097	0.097	0.101	0.105	0.101	0.101	0.100	0.097
SALTON SEA	0.134	0.135	0.131	0.130	0.129	0.126	0.125	0.121	0.118	0.113	0.110	0.111	0.107	0.107	0.100	0.099	0.100	0.105	0.108	0.104
SAN DIEGO	0.132	0.125	0.124	0.121	0.125	0.129	0.125	0.118	0.112	0.109	0.108	0.104	0.099	0.102	0.099	0.100	0.094	0.095	0.093	0.089
SAN FRANCISCO BAY AREA	0.103	0.097	0.092	0.092	0.097	0.088	0.084	0.082	0.081	0.082	0.087	0.093	0.090	0.089	0.086	0.087	0.082	0.082	0.086	0.084
SAN JOAQUIN VALLEY	0.111	0.117	0.118	0.121	0.120	0.119	0.118	0.115	0.112	0.111	0.119	0.119	0.115	0.115	0.113	0.111	0.109	0.115	0.115	0.116
SOUTH CENTRAL COAST	0.132	0.131	0.129	0.131	0.132	0.130	0.127	0.118	0.115	0.112	0.117	0.119	0.115	0.112	0.106	0.105	0.101	0.097	0.095	0.094
SOUTH COAST	0.226	0.222	0.217	0.205	0.192	0.186	0.182	0.180	0.177	0.171	0.165	0.161	0.148	0.154	0.147	0.146	0.129	0.128	0.131	0.127

Table B-4

Ozone

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.100	0.100	0.100	0.100	0.080	0.100	0.090	0.150	0.090	0.120	0.110	0.095	0.092	0.092	0.094	0.090	0.100	0.100	0.089	0.086
LAKE COUNTY	0.080	0.080	0.090	0.070	0.060	0.090	0.080	0.080	0.080	0.090	0.070	0.090	0.080	0.080	0.090	0.080	0.070	0.090	0.080	0.080
LAKE TAHOE	0.100	0.090	0.090	0.090	0.100	0.090	0.090	0.100	0.090	0.086	0.092	0.083	0.095	0.081	0.095	0.089	0.095	0.102	0.086	0.096
MOJAVE DESERT	0.210	0.260	0.220	0.270	0.220	0.270	0.240	0.230	0.200	0.188	0.240	0.175	0.187	0.202	0.137	0.163	0.146	0.157	0.163	0.138
MOUNTAIN COUNTIES		0.090	0.145	0.160	0.130	0.150	0.110	0.130	0.120	0.130	0.146	0.138	0.145	0.163	0.165	0.134	0.148	0.156	0.145	0.137
NORTH CENTRAL COAST	0.110	0.100	0.146	0.127	0.140	0.120	0.140	0.110	0.110	0.101	0.138	0.120	0.112	0.124	0.107	0.098	0.108	0.115	0.111	0.093
NORTH COAST	0.070	0.070	0.090	0.090	0.050	0.070	0.060	0.090	0.090	0.100	0.100	0.080	0.100	0.130	0.100	0.090	0.090	0.092	0.090	0.090
NORTHEAST PLATEAU	0.080	0.080	0.090	0.080	0.080	0.080	0.050	0.080	0.070	0.080	0.070	0.070	0.082	0.078	0.070	0.082	0.049	0.087	0.089	0.077
SACRAMENTO VALLEY	0.200	0.170	0.180	0.180	0.170	0.150	0.190	0.170	0.150	0.145	0.156	0.157	0.143	0.160	0.160	0.138	0.142	0.139	0.140	0.131
SALTON SEA	0.240	0.180	0.170	0.200	0.190	0.170	0.180	0.170	0.210	0.180	0.232	0.180	0.160	0.236	0.171	0.169	0.167	0.156	0.144	0.125
SAN DIEGO	0.220	0.190	0.290	0.250	0.250	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124	0.124	0.141	0.121	0.125	0.129
SAN FRANCISCO BAY AREA	0.160	0.140	0.170	0.150	0.140	0.130	0.140	0.130	0.130	0.130	0.155	0.138	0.114	0.147	0.156	0.152	0.134	0.160	0.128	0.113
SAN JOAQUIN VALLEY	0.160	0.180	0.200	0.190	0.180	0.170	0.180	0.160	0.160	0.175	0.173	0.165	0.147	0.169	0.155	0.165	0.149	0.164	0.156	0.155
SOUTH CENTRAL COAST	0.230	0.180	0.185	0.180	0.230	0.170	0.170	0.150	0.146	0.164	0.169	0.158	0.137	0.174	0.135	0.128	0.129	0.132	0.130	0.122
SOUTH COAST	0.390	0.350	0.330	0.350	0.340	0.330	0.320	0.300	0.280	0.300	0.256	0.239	0.205	0.244	0.174	0.184	0.190	0.169	0.194	0.163

Table B-5

Maximum 8-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0.090	0.093	0.091	0.098	0.077	0.091	0.073	0.103	0.077	0.092	0.101	0.090	0.080	0.085	0.089	0.080	0.095	0.088	0.084	0.081
LAKE COUNTY	0.070	0.080	0.080	0.061	0.053	0.063	0.066	0.057	0.072	0.075	0.063	0.070	0.065	0.076	0.072	0.073	0.065	0.077	0.065	0.066
LAKE TAHOE	0.086	0.080	0.082	0.085	0.085	0.080	0.081	0.082	0.071	0.079	0.089	0.073	0.071	0.077	0.079	0.077	0.084	0.079	0.079	0.082
MOJAVE DESERT	0.167	0.225	0.161	0.167	0.161	0.198	0.173	0.165	0.147	0.155	0.170	0.146	0.133	0.144	0.122	0.132	0.117	0.123	0.130	0.119
MOUNTAIN COUNTIES		0.078	0.111	0.138	0.110	0.115	0.102	0.112	0.111	0.108	0.113	0.113	0.112	0.127	0.118	0.113	0.109	0.137	0.122	0.124
NORTH CENTRAL COAST	0.091	0.083	0.113	0.096	0.100	0.095	0.108	0.090	0.087	0.092	0.102	0.101	0.091	0.097	0.085	0.084	0.088	0.094	0.088	0.083
NORTH COAST	0.056	0.062	0.076	0.076	0.042	0.060	0.051	0.072	0.073	0.080	0.090	0.071	0.091	0.106	0.087	0.077	0.073	0.072	0.080	0.077
NORTHEAST PLATEAU	0.075	0.070	0.081	0.071	0.076	0.076	0.046	0.073	0.070	0.068	0.062	0.063	0.074	0.071	0.067	0.071	0.038	0.075	0.074	0.071
SACRAMENTO VALLEY	0.161	0.125	0.127	0.130	0.133	0.127	0.140	0.122	0.120	0.121	0.128	0.126	0.107	0.137	0.129	0.108	0.108	0.120	0.118	0.101
SALTON SEA	0.160	0.142	0.141	0.137	0.160	0.130	0.148	0.128	0.128	0.130	0.132	0.125	0.120	0.136	0.110	0.113	0.113	0.124	0.110	0.106
SAN DIEGO	0.168	0.143	0.196	0.156	0.193	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100	0.106	0.116	0.100	0.103	0.095
SAN FRANCISCO BAY AREA	0.127	0.106	0.116	0.101	0.102	0.105	0.108	0.101	0.112	0.097	0.115	0.112	0.084	0.111	0.122	0.114	0.102	0.106	0.101	0.084
SAN JOAQUIN VALLEY	0.131	0.135	0.150	0.127	0.136	0.123	0.130	0.121	0.125	0.129	0.134	0.137	0.127	0.136	0.123	0.131	0.120	0.132	0.127	0.126
SOUTH CENTRAL COAST	0.156	0.145	0.153	0.142	0.176	0.143	0.140	0.125	0.129	0.132	0.144	0.127	0.114	0.151	0.112	0.108	0.113	0.109	0.114	0.102
SOUTH COAST	0.288	0.251	0.210	0.258	0.252	0.193	0.203	0.218	0.195	0.208	0.203	0.173	0.148	0.206	0.142	0.149	0.144	0.144	0.153	0.145

Table B-6

Ozone

Days Above State Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	1	5	4	3	0	2	0	5	0	4	2	1	0	0	0	0	4	2	0	0
LAKE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKE TAHOE	1	0	0	0	2	0	0	1	0	0	0	0	1	0	1	0	1	1	0	1
MOJAVE DESERT	147	156	158	152	158	136	135	150	135	137	119	108	101	77	83	86	72	75	93	75
MOUNTAIN COUNTIES		0	27	51	39	22	23	54	35	57	49	65	29	52	66	51	50	62	56	33
NORTH CENTRAL COAST	12	1	37	14	10	11	12	9	12	6	8	16	1	10	3	3	3	8	3	0
NORTH COAST	0	0	0	0	0	0	0	0	0	1	1	0	2	7	4	0	0	0	0	0
NORTHEAST PLATEAU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY	59	66	94	98	68	50	68	74	34	60	50	58	25	62	59	41	44	46	51	29
SALTON SEA	96	80	85	107	119	83	86	100	113	126	124	98	91	72	88	54	81	68	66	48
SAN DIEGO	148	131	127	160	159	139	106	97	90	79	96	51	43	54	27	24	29	15	24	12
SAN FRANCISCO BAY AREA	45	39	46	41	22	14	23	23	19	13	28	34	8	29	20	12	15	16	19	7
SAN JOAQUIN VALLEY	149	147	156	156	148	131	133	127	125	118	124	120	110	90	123	114	123	127	137	106
SOUTH CENTRAL COAST	137	150	126	138	117	105	112	75	63	90	95	82	59	54	33	38	34	24	45	23
SOUTH COAST	207	217	196	216	211	185	184	190	185	165	153	141	144	107	111	115	121	116	125	105

Table B-7

Ozone

Days Above National 1-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
LAKE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKE TAHOE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOJAVE DESERT	93	105	82	108	93	76	70	77	69	77	60	39	22	26	4	11	6	16	13	4
MOUNTAIN COUNTIES		0	3	7	2	2	0	1	0	2	3	7	2	8	7	4	1	8	6	2
NORTH CENTRAL COAST	0	0	5	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
NORTH COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
NORTHEAST PLATEAU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY	19	24	24	35	8	16	14	14	7	9	11	9	3	14	7	5	2	7	5	1
SALTON SEA	29	31	40	35	38	27	27	31	36	20	33	21	13	13	25	5	15	5	7	1
SAN DIEGO	50	42	40	45	56	39	27	19	14	9	12	2	1	9	0	0	2	0	1	1
SAN FRANCISCO BAY AREA	9	5	14	5	4	2	2	2	3	2	11	8	0	8	3	3	1	2	1	0
SAN JOAQUIN VALLEY	53	59	65	74	54	45	51	29	43	43	44	56	16	39	28	30	32	31	37	9
SOUTH CENTRAL COAST	44	60	31	56	48	20	35	12	14	17	25	19	3	6	2	2	2	1	2	0
SOUTH COAST	158	167	161	178	157	131	130	142	124	118	98	85	64	60	39	33	36	45	64	28

Table B-8

Days Above National 8-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	2	13	2	6	0	3	0	9	0	6	2	1	0	1	1	0	4	2	0	0
LAKE COUNTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKE TAHOE	1	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
MOJAVE DESERT	129	146	144	142	137	120	122	134	124	129	109	91	78	68	73	72	65	66	74	49
MOUNTAIN COUNTIES		0	22	43	38	22	33	47	34	49	47	59	28	54	65	56	44	59	56	32
NORTH CENTRAL COAST	5	0	26	6	3	5	3	4	4	1	3	9	1	6	1	0	2	5	2	0
NORTH COAST	0	0	0	0	0	0	0	0	0	0	1	0	1	5	2	0	0	0	0	0
NORTHEAST PLATEAU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY	42	50	73	68	37	44	60	56	22	48	40	44	15	60	43	35	37	34	40	20
SALTON SEA	70	62	72	70	90	56	65	75	80	75	79	62	63	40	35	33	54	55	47	37
SAN DIEGO	109	81	99	119	122	96	67	66	58	46	48	31	16	35	17	16	17	13	6	8
SAN FRANCISCO BAY AREA	17	13	29	20	13	7	6	6	5	4	18	14	0	16	9	4	7	7	7	0
SAN JOAQUIN VALLEY	127	134	148	140	133	104	121	119	103	108	109	114	95	84	117	103	109	125	134	109
SOUTH CENTRAL COAST	111	122	91	113	97	76	94	63	53	65	70	68	46	41	24	30	25	16	35	18
SOUTH COAST	181	191	179	194	181	161	160	173	161	148	120	115	118	93	93	94	92	96	109	88

Table B-9

PM_{10}

Maximum 24-Hour Concentration (State) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS				166	227	866	150	493	981	388	692	309	402	1022	2708	9967	3643	7401	15641	4797
LAKE COUNTY				23	29	30	31	22	30	21	30	26	18	34	40	21	23	85	32	22
LAKE TAHOE								52	92	78	71	72	55	50	36	44	50	46	52	112
MOJAVE DESERT				63	191	462	780	80	79	140	143	138	130	159	40	90	112	194	169	83
MOUNTAIN COUNTIES				113	144	209	350	120	130	115	118	114	138	69	115	89	277	72	58	124
NORTH CENTRAL COAST				65	58	56	55	41	102	106	152	115	113	78	106	77	74	81	90	83
NORTH COAST				101	92	266	78	58	54	77	68	87	66	52	95	53	72	72	71	64
NORTHEAST PLATEAU				58	59	63	60	74	60	101	78	188	97	63	93	74	91	73	31	29
SACRAMENTO VALLEY				100	147	153	136	111	113	154	145	98	126	130	179	90	112	96	123	171
SALTON SEA*				368	712	520	340	175	175	258	229	359	532	181	238	279	634	361	848	364
SAN DIEGO				80	90	115	81	67	159	129	121	93	125	57	119	136	106	131	289	138
SAN FRANCISCO BAY AREA				146	147	165	155	112	93	97	74	76	85	100	117	80	114	84	60	65
SAN JOAQUIN VALLEY				206	237	439	279	186	239	192	279	153	199	167	186	153	221	194	150	219
SOUTH CENTRAL COAST				132	119	133	96	135	141	139	129	93	321	111	86	102	77	100	169	69
SOUTH COAST				287	271	475	179	649	231	161	219	162	208	116	183	139	219	126	159	133

Table B-10

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Maximum 24-Hour Concentration (National) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS				394	1861	866	181	526	981	388	2668	491	402	1116	867	10466	4482	6505	16462	4913
LAKE COUNTY				28	29	30	31	22	30	21	30	26	18	35	43	22	21			
LAKE TAHOE				95	73	84	78	85	92	78	71	72	55	59	41	50	58	51	61	130
MOJAVE DESERT				150	191	462	780	242	79	140	235	138	130	165	109	90	115	208	181	88
MOUNTAIN COUNTIES				180	144	209	350	120	130	115	118	114	138	92	125	98	312	76	66	133
NORTH CENTRAL COAST				71	58	57	55	45	102	106	152	115	113	76	103	74	72	77	87	80
NORTH COAST				125	92	266	78	58	54	77	68	87	66	50	100	51	73	74	68	61
NORTHEAST PLATEAU				92	59	63	60	74	60	101	78	188	97	66	100	80	105	86	33	32
SACRAMENTO VALLEY				115	139	153	136	111	110	154	145	98	126	130	179	86	105	92	81	169
SALTON SEA*				368	712	520	340	175	175	258	229	359	532	176	227	268	647	373	840	354
SAN DIEGO				81	90	115	81	67	159	129	121	93	125	89	121	139	107	130	280	137
SAN FRANCISCO BAY AREA				146	150	173	155	112	101	97	74	76	95	92	114	76	109	80	58	63
SAN JOAQUIN VALLEY				244	250	439	279	183	239	190	279	153	199	160	183	145	205	189	150	217
SOUTH CENTRAL COAST				132	119	133	119	135	141	139	129	98	321	110	90	113	89	178	149	146
SOUTH COAST				289	271	475	179	649	231	161	219	162	208	116	183	139	219	130	164	137

Table B-11

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

PM_{10}

Maximum Annual Average (State) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS					27.1	29.4	23.2	37.0	34.2	29.8	32.3	21.5	26.4	57.8	13.6	116.8	63.1	159.3	130.4	68.3
LAKE COUNTY					12.9			11.9	11.3	11.0	10.8	10.2	8.6			10.6	10.2	13.1	10.0	10.0
LAKE TAHOE										27.1	22.5		21.6	19.8	16.9	17.3	16.9	17.1	15.0	37.5
MOJAVE DESERT					42.5			39.7	35.1	27.9		29.0	27.4	15.0	17.7	20.3	19.8	24.2	27.9	18.3
MOUNTAIN COUNTIES							48.4		18.4	33.9	24.2	21.5	28.3	18.5	17.7	19.9	29.6	25.9	21.0	26.3
NORTH CENTRAL COAST					24.3	23.8	24.3		21.7	31.1	36.3	32.8	36.9		32.3	31.2		28.9	31.6	28.2
NORTH COAST					31.4	28.0	25.4	21.9	23.2	24.3	26	24.4	23.4	22.1	24.3	23.5	25.4	22.9	22.2	20.6
NORTHEAST PLATEAU					24.8			23.6		22.1	16.0				16.8			17.5	12.8	12.8
SACRAMENTO VALLEY					41.9	38.5	39.2	35.2	31.2	33.3	29.9	29.9	28.8	29.9	39.4	27.9	30.5	31.8	28.8	43.2
SALTON SEA*					77.9	80.3	69.1	47.5	52.6	48.3	72.0	73.6	77.7	66.6	79.0	84.8	87.1	80.9	79.7	60.3
SAN DIEGO					44.4	32.8	40.7	29.0	45.8	50.7	47.1	30.2	46.6	26.5	50.9	44.5	47.4	52.4	52.6	51.7
SAN FRANCISCO BAY AREA					37.7	35.1	37.9	33.9	28.8	28.3	25.7	24.8	25.8	25.8	30.0	27.8	29.7	26.4	24.8	26.0
SAN JOAQUIN VALLEY				52.7	67.0	80.1	70.0	62.4	56.3	49.6	57.9	54.1	47.3	40.5	60.1	53.9	52.3	59.9	52.3	43.6
SOUTH CENTRAL COAST				40.3	41.6	36.9	40.0	33.0	29.3	31.6	30.9	29.3	36.5	26.1	29.5	31.2	28.8	28.6	30.0	28.8
SOUTH COAST					94.0	78.2	76.0	79.0	72.5	65.5	68.8	61.5	65.3	50.2	72.2	60.1	62.9	56.2	55.1	53.5

Table B-12

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Maximum Annual Average of Quarters (National) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS				36.9	34.6	39.6	23.2	37.3	34.6	29.9	31.8	21.5	26.5	53.8	15.3	121.2	69.6	79.5	38.8	25.4
LAKE COUNTY					12.9		12.6	11.8	11.3	10.9	10.7	10.2	8.6	7.8		10.8				
LAKE TAHOE					28.1	30.7	28.3			27.1	22.5	23.4	21.6	23.4	19.9	20.4	19.8	19.9	17.6	44.2
MOJAVE DESERT				35.8	48.6	48.1	58.0	39.4	34.9	42.1	25.5	29.0	29.2	27.8	32.1	33.6	29.8	34.3	33.2	33.1
MOUNTAIN COUNTIES						40.9	47.8	37.5	18.4	34.6	28.0	21.8	32	25.3	27.6	26.3	33.3	28.5	23.1	28.0
NORTH CENTRAL COAST				23.0	25.4	23.9	24.3		21.7	31.1	36.4	32.8	37	28.5	30.9	29.9	29.4	27.7	30.1	27.3
NORTH COAST				36.2	31.4	28.0	25.3	21.8	22.6	24.3	26.1	24.6	23.4	21.1	24.3	22.4	24.1	22.2	21.4	20.7
NORTHEAST PLATEAU				25.0	24.8	23.5		23.6		22.1	30.3	13.6	12.9	11.1	26.3	22.5	19.8	18.6	13.3	13.6
SACRAMENTO VALLEY				42.8	41.9	41.7	42.3	34.7	31.8	34.5	30.1	29.8	28.6	29.0	38.4	27.9	30.2	30.9	28.4	42.6
SALTON SEA*				60.4	89.9	80.3	69.3	47.5	53.3	48.3	71.9	73.6	77.7	66.1	77.8	95.2	86.2	79.9	80.0	60.8
SAN DIEGO				40.0	43.8	37.6	40.6	35.9	45.9	50.7	46.8	30.0	46.6	42.5	52.2	45.2	49.1	54.9	52.1	51.2
SAN FRANCISCO BAY AREA				38.3	40.8	40.4	38.3	33.7	28.8	28.3	25.7	24.9	25.8	25.1	28.7	26.8	28.9	25.4	24.2	25.3
SAN JOAQUIN VALLEY				67.4	79.3	79.3	69.9	62.9	56.3	50.1	58.2	54.1	48.2	39.9	59.5	53.1	57.4	59.2	52.4	44.6
SOUTH CENTRAL COAST				41.6	41.5	36.6	39.9	33.2	42.8	32.5	31.1	29.3	37.0	25.0	31.3	31.0	31.5	28.9	30.7	31.4
SOUTH COAST				94.5	93.0	78.2	76.1	79.0	72.5	65.5	68.8	62.8	65.6	50.2	72.2	59.1	63.3	58.1	55.6	54.8

Table B-13

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

PM_{10}

Calculated Days Above State 24-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS				195	170	116.2	100.7	132	128	105	117	120	90	117	24.4	113.2	90.2	108.4	71.2	97.2
LAKE COUNTY				0	0	0	0	0	0	0	0	0	0	0	0	0	0			
LAKE TAHOE				57	26	55	36	36	30	42	18	24	12	12	0	0	18	3	6	96
MOJAVE DESERT				204	230	241	186	153	131	132	60	87	36	43	72	63	54	84	69	72
MOUNTAIN COUNTIES				159	116	154.5	132	102	113	93	42	42	128	63	60	57	60	36	12	72
NORTH CENTRAL COAST				24	18	18	12	0	59	30	72	72	96	30	54	24	51	30	42	42
NORTH COAST				126	71	40	38	15	14.5	48	18	23	20	0	54	9	42	24	30	6
NORTHEAST PLATEAU				21	26	25	12	24	6	24	54	18	18	24	66	60	36	36	0	0
SACRAMENTO VALLEY				183	134	175	189	177	92	108	108	129	65	97	144	81	102	126	66	195
SALTON SEA*				252	294	286	294	186	239	274	306	312	320	265	324	330	341	328	315	318
SAN DIEGO				105	146	60	90	42	143.5	131	117	96	125	108	140	144	146	186	147	186
SAN FRANCISCO BAY AREA				123	137	93	125	108	59	54	42	18	20	25	63	42	51	30	30	36
SAN JOAQUIN VALLEY				300	302	313	285	273	233	253	246	225	188	185	216	237	236	267	242	196.5
SOUTH CENTRAL COAST				198	212	151	204	138	174	81	108	138	144	88	108	135	72	156	90	72
SOUTH COAST				345	338	301	294	282	293	276	252	276	290	238	288	300	278	297	252	279

Table B-14

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

Calculated Days Above National 24-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS				12	12	14	8	30	22	9	16	27	15	32	6	37	17	18	28	26
LAKE COUNTY					0	0	0	0	0	0	0	0	0	0		0				
LAKE TAHOE					0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
MOJAVE DESERT				0	8	21	30	6	0	0	3	0	0	6	0	0	0	6	8	0
MOUNTAIN COUNTIES				7	0	6	19	0	0	0	0	0	0	0	0	0	6	0	0	0
NORTH CENTRAL COAST				0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST				0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU				0	0	0		0		0	0	3	0	0	0	0	0	0	0	0
SACRAMENTO VALLEY				0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6
SALTON SEA*				12	37	21	18	6	18	18	26	37	35	19	29	36	29	18	28	13
SAN DIEGO				0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	9	0
SAN FRANCISCO BAY AREA				0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY				40	40	56	40	3	11	8	8	0	3	6	12	0	12	8	0	3
SOUTH CENTRAL COAST				0	0	0	0	0	0	0	0	0	14	0	0	0	0	6	0	0
SOUTH COAST				44	32	33	15	24	12	3	31	6	17	0	6	0	5	0	6	0

Table B-15

** Salton Sea PM_{10} statistics exclude data from the Calexico - East site because data from this site do not represent widespread exposure.*

$PM_{2.5}$

Maximum 24-Hour Concentration (State) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS															40.7	68.0	76.0	68.0	44.0	81.0
LAKE COUNTY															14.5	10.0	15.1	74.7	21.9	18.1
LAKE TAHOE															21.0	23.0	31.0	27.0	27.4	23.2
MOJAVE DESERT															47.6	38.6	35.0	38.0	28.0	34.0
MOUNTAIN COUNTIES															92.0	48.0	120.0	41.0	54.0	148.4
NORTH CENTRAL COAST															31.3	26.4	25.6	23.5	15.9	22.6
NORTH COAST															36.9	24.0	38.3	59.7	36.1	25.6
NORTHEAST PLATEAU															40.0	38.0	35.0	5.0	10.0	
SACRAMENTO VALLEY														96.0	108.0	123.1	128.2	96.1	73.2	76.3
SALTON SEA															52.5	84.2	60.2	142.7	153.6	76.0
SAN DIEGO															64.3	66.3	60.0	53.6	239.2	67.3
SAN FRANCISCO BAY AREA															90.5	67.2	107.5	84.5	56.1	73.7
SAN JOAQUIN VALLEY															136.0	160.0	154.7	104.3	84.5	77.0
SOUTH CENTRAL COAST															64.6	55.3	57.7	46.4	116.0	91.9
SOUTH COAST															121.4	119.6	104.0	82.1	121.2	93.8

Table B-16

Maximum 24-Hour Concentration (National) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS															40.7	68.0	76.0	68.0	44.0	81.0
LAKE COUNTY															14.5	10.0	15.1	74.7	21.9	18.1
LAKE TAHOE															21.0	23.0	31.0	27.0	21.0	20.0
MOJAVE DESERT															47.6	38.6	35.0	38.0	28.0	34.0
MOUNTAIN COUNTIES															92.0	48.0	120.0	41.0	43.0	44.0
NORTH CENTRAL COAST															31.3	26.4	25.6	23.5	15.9	22.6
NORTH COAST															36.9	24.0	38.3	59.7	36.1	25.6
NORTHEAST PLATEAU															40.0	38.0	35.0	5.0	10.0	
SACRAMENTO VALLEY														96.0	108.0	98.0	78.0	91.0	65.0	65.0
SALTON SEA															52.5	84.2	60.2	46.5	65.1	74.2
SAN DIEGO															64.3	66.3	60.0	53.6	239.2	67.3
SAN FRANCISCO BAY AREA															90.5	67.2	107.5	76.7	56.1	73.7
SAN JOAQUIN VALLEY															136.0	160.0	154.7	90.7	67.8	71.0
SOUTH CENTRAL COAST															64.6	55.3	57.7	46.4	116.0	41.2
SOUTH COAST															121.4	119.6	98.0	82.1	121.2	93.8

Table B-17

$PM_{2.5}$

98th Percentile 24-Hour Concentration (ug/m^3)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																67.0	23.0	64.0	8.0	
LAKE COUNTY																9.4	11.3	46.3	15.1	9.0
LAKE TAHOE															21.0	22.0	26.0		19.0	
MOJAVE DESERT															23.5	23.0	21.0	34.0	23.0	20.0
MOUNTAIN COUNTIES															84.0	30.0	43.0	30.0	40.0	33.0
NORTH CENTRAL COAST															25.0	21.5	23.1	22.8	14.0	15.5
NORTH COAST															27.7	21.5	29.0	39.7	15.2	23.1
NORTHEAST PLATEAU															27.0	37.0				
SACRAMENTO VALLEY														96.0	84.0	81.0	78.0	77.0	43.0	54.0
SALTON SEA															39.5	56.0	33.0	44.1	24.9	31.9
SAN DIEGO															35.7	32.5	40.8	36.0	46.9	37.4
SAN FRANCISCO BAY AREA																55.3	56.0	57.5	37.4	39.8
SAN JOAQUIN VALLEY															120.0	108.0	96.0	80.4	56.0	54.0
SOUTH CENTRAL COAST															35.4	41.0	50.7	35.2	33.4	36.7
SOUTH COAST															85.6	83.0	74.3	66.3	76.6	72.4

Table B-18

$PM_{2.5}$

Average of Quarterly Means (State) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																	5.5			
LAKE COUNTY																	4.1	6.3	4.4	4.4
LAKE TAHOE															8.3	7.8	8.2		7.2	
MOJAVE DESERT															11.2		11.5	13.9	9.4	10.8
MOUNTAIN COUNTIES															11.1	9.0	8.1	9.9	8.6	11.7
NORTH CENTRAL COAST																7.9	9.1	9.1	7.3	6.8
NORTH COAST															9.1		9.4	9.1	7.4	7.0
NORTHEAST PLATEAU																8.5				
SACRAMENTO VALLEY															17.5	15.8	11.9	15.1	15.9	16.5
SALTON SEA																11.2		15.1	11.4	16.1
SAN DIEGO																		15.5	14.4	14.1
SAN FRANCISCO BAY AREA																11.6	12.5	13.8	11.7	11.6
SAN JOAQUIN VALLEY															23.4	23.9	20.8	24.1	24.8	18.2
SOUTH CENTRAL COAST															9.6		14.9	9.5	12.4	12.5
SOUTH COAST																24.0	25.0	25.8	24.8	16.6

Table B-19

Average of Quarterly Means (National) (ug/m³)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																	5.5	8.4		
LAKE COUNTY																4.3	4.2	6.3	4.4	4.4
LAKE TAHOE															8.3	7.8	8.2		7.2	
MOJAVE DESERT															11.9	12	11.5	13.9	11.4	10.8
MOUNTAIN COUNTIES															11.1	9.0	15.6	9.9	13.3	11.7
NORTH CENTRAL COAST															9.8	7.9	9.1	9.1	7.4	7.0fs
NORTH COAST															9.1	9.1	9.4	9.1	7.4	8.2
NORTHEAST PLATEAU															7.9	8.5				
SACRAMENTO VALLEY															17.5	15.8	13.0	15.1	12.2	15.1
SALTON SEA															15.2	16.9	12.2	15.1	11.4	11.8
SAN DIEGO															18.0	15.8	17.7	16.0	15.5	14.1
SAN FRANCISCO BAY AREA																13.6	12.5	13.8	11.7	11.6
SAN JOAQUIN VALLEY															27.7	23.9	22.5	24.1	19.7	18.9
SOUTH CENTRAL COAST															13.8	10.3	14.9	14.6	14.2	12.6
SOUTH COAST															31.0	28.3	31.0	27.4	24.8	22.1

Table B-20

Carbon Monoxide

Peak 8-Hour Indicator (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	7.3	7.2	7.0	5.9	5.8	5.7	5.6	3.5	5.0	4.7	4.6	4.0	4.0	3.9		2.9	2.5	2.5		
LAKE COUNTY					1.9	2.9	2.9													
LAKE TAHOE	16.4	15.5	14.9	13.2	12.6	11.9	11.1	10.2	8.7	8.3	7.8	7.0	5.6	5.0	2.3	2.1	2.0	2.0	1.9	1.9
MOJAVE DESERT	5.6	5.2	4.9	4.6	5.5	7.7	7.6	6.5	6.2	6.1	5.8	7.4	4.8	4.4	4.4	4.6	4.8	2.0	2.0	2.0
MOUNTAIN COUNTIES		4.5	4.5		4.1	4.3		2.9	2.9	2.8	2.8	2.7	2.4	5.1	5.4	5.7	2.4	1.6	1.6	4.8
NORTH CENTRAL COAST	2.4	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.0	2.0	2.0	1.6	1.6	1.5	1.4	1.2
NORTH COAST	5.2	5.2	3.4		4.6	4.6			2.4		3.2	3.4	3.3	3.1	3.6	3.4	3.3	2.6	2.3	2.0
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	13.2	14.6	14.4	13.4	14.0	14.7	14.8	12.9	10.7	9.6	9.3	8.5	7.7	7.3	7.0	7.0	7.3	6.0	4.4	4.2
SALTON SEA	2.5	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	17.4	18.8	17.8	17.4	15.5	15.5	14.8	14.3	12.8	11.5	10.5
SAN DIEGO	10.6	10.2	10.4	10.2	10.3	10.2	10.0	8.6	7.8	7.7	7.3	7.3	6.3	6.3	5.6	5.3	5.4	5.3	5.0	4.6
SAN FRANCISCO BAY AREA	13.9	14	13.4	10.7	11.8	12.6	12.5	11.1	9.3	8.1	7.8	7.4	6.5	6.7	6.5	7.1	6.9	6.0	5.5	4.0
SAN JOAQUIN VALLEY	13.4	13.9	13.9	14.1	13.7	13.9	13.2	11.5	10.0	10.0	10.9	9.9	9.0	8.3	8.5	8.4	6.4	5.3	4.8	4.2
SOUTH CENTRAL COAST	10.2	9.9	10.1	9.0	8.8	8.2	7.5	6.4	5.5	5.9	6.0	5.8	5.0	4.8	4.5	4.7	3.1	2.7	2.7	2.4
SOUTH COAST	21.1	21.1	21.7	21.9	22.5	21.9	19.0	17.7	16.5	16.7	15.6	16.1	15.5	15.4	13.7	12.6	11.2	9.4	8.7	8.3

Table B-21

Carbon Monoxide

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	16.0	11.0	9.0	13.0	12.0	10.0	11.0	11.0	13.0	9.0	10.0	6.0	8.2	6.7		4.2	15.4	3.8		
LAKE COUNTY					3.0	6.0	7.0													
LAKE TAHOE	23.0	20.0	19.0	19.0	17.0	18.0	14.0	15.0	13.0	11.6	9.5	10.4	7.7	7.5	3.2	5.4	3.1	3.8	2.4	6.1
MOJAVE DESERT	12.0	9.0	12.0	11.0	13.0	11.0	10.0	9.0	8.0	9.1	7.5	8.4	5.9	5.4	10.3	6.0	6.1	3.4	3.9	2.9
MOUNTAIN COUNTIES		6.0	3.0		6.0	5.0	1.0	6.2	10.0	9.3	9.3	4.5	6.6	6.7	4.1	5.0	6.2	3.7	2.5	6.5
NORTH CENTRAL COAST	6.0	4.0	5.0	6.0	5.0	5.0	4.0	4.0	4.0	4.6	3.2	5.5	4.4	3.8	3.8	3.5	3.3	2.3	2.8	5.5
NORTH COAST	8.0	6.0	4.0	1.0	10.0	9.0		1.0	6.0		5.4	4.8	7.4	4.8	5.2	4.4	4.0	3.1	5.3	2.3
NORTHEAST PLATEAU			12.0	4.0																
SACRAMENTO VALLEY	17.0	20.0	15.0	17.0	18.0	17.0	15.0	14.0	12.0	10.8	9.8	8.7	9.5	7.9	7.7	10.0	17.2	7.8	8.5	7.3
SALTON SEA	5.0	5.0	5.0	4.0	6.0	5.0	5.0	5.0	6.0	30.6	32	27.0	24.0	23.5	22.9	19.9	17.4	15.6	11.8	12.6
SAN DIEGO	17.0	16.0	14.0	17.0	17.0	18.0	14.0	14.0	11.4	11.0	9.9	12.4	9.3	10.2	9.9	9.3	8.5	8.5	12.7	6.9
SAN FRANCISCO BAY AREA	21.0	20.0	17.0	15.0	19.0	18.0	15.0	12.0	14.0	12.0	10.1	8.8	10.7	8.7	9.0	9.8	7.6	7.7	8.6	4.8
SAN JOAQUIN VALLEY	18.0	21.0	16.0	19.0	23.0	17.0	19.0	13.0	13.0	15.0	12.0	11.0	9.9	10.3	11.9	10.1	16.0	6.1	5.8	4.6
SOUTH CENTRAL COAST	17.0	18.0	14.0	15.0	11.0	11.0	9.0	12.0	9.0	10.7	8.9	12.6	8.2	8.5	8.2	6.2	8.3	5.7	7.2	4.7
SOUTH COAST	33.0	27.0	26.0	32.0	31.0	24.0	30.0	28.0	21.0	24.9	16.8	22.5	19.2	17.0	19.0	13.8	11.7	15.8	12.2	10.4

Table B-22

Maximum 8-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	7.4	6.0	6.3	5.0	5.4	4.4	5.0	4.4	4.5	5.4	5.4	3.0	3.4	3.0		2.5	2.5	1.8		
LAKE COUNTY					2.2	2.6	3.1													
LAKE TAHOE	16.3	12.5	13.0	12.5	11.3	10.1	9.2	9.9	7.5	7.1	6.3	5.1	3.8	4.3	2.4	1.9	1.9	3.0	1.9	4.4
MOJAVE DESERT	5.7	4.6	4.0	5.9	7.1	8.3	7.1	5.4	5.9	5.6	5.1	7.5	4.0	3.6	5.4	4.3	3.3	2.2	2.1	1.7
MOUNTAIN COUNTIES		4.2	2.3		4.6	3.5	0.1	4.5	5.4	5.4	3.4	2.6	1.9	5.5	3.0	1.6	4.3	1.5	1.5	5.7
NORTH CENTRAL COAST	3.3	2.3	2.3	2.4	2.4	2.5	2.5	2.9	2.7	2.1	2.1	2.6	1.8	2.2	1.8	1.4	1.6	1.4	1.1	1.2
NORTH COAST	5.5	3.1	3.0	1.0	4.5	3.5		0.6	2.4		3.2	2.7	3.2	3.5	3.7	2.6	2.3	2.5	2.2	1.8
NORTHEAST PLATEAU			10.4	1.8																
SACRAMENTO VALLEY	13.3	13.9	10.0	12.3	15.9	14.0	12.3	8.6	9.4	8.5	7.4	7.2	7.2	7.1	6.6	6.3	5.3	4.3	4.5	4.1
SALTON SEA	2.6	3.6	2.9	2.1	2.9	2.3	2.5	2.4	2.0	13.1	22.9	22.1	17.8	14.4	17.9	15.5	12.3	11.6	8.8	10.3
SAN DIEGO	13.0	10.4	9.4	10.3	10.5	9.1	7.9	7.9	7.5	7.5	6.3	7.1	5.4	4.8	6.0	5.9	5.1	4.7	10.6	4.1
SAN FRANCISCO BAY AREA	16.1	12.6	10.0	12.8	12.0	11.0	11.0	7.8	7.9	8.8	5.8	7.0	6.1	6.3	6.3	7.0	5.1	5.1	4.4	3.4
SAN JOAQUIN VALLEY	11.0	16.3	12.9	16.5	13.4	11.5	11.4	8.3	9.3	8.9	9.1	7.7	7.5	8.0	7.8	6.6	6.0	4.5	4.1	3.0
SOUTH CENTRAL COAST	10.5	8.6	7.5	7.4	7.4	5.8	6.4	5.9	4.8	6.5	5.8	4.9	4.1	4.6	4.2	4.3	3.4	2.4	3.7	2.6
SOUTH COAST	27.7	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.2	13.8	17.5	17.1	13.3	11.2	10.1	7.6	10.1	7.3	6.5

Table B-23

Carbon Monoxide

Days Above State 8-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0		
LAKE COUNTY					0	0	0													
LAKE TAHOE*	121	96	87	80	67	39	24	13	12	9	1	0	0	0	0	0	0	0	0	0
MOJAVE DESERT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOUNTAIN COUNTIES		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU			1	0																
SACRAMENTO VALLEY	12	13	5	12	22	14	9	0	2	0	0	0	0	0	0	0	0	0	0	0
SALTON SEA	0	0	0	0	0	0	0	0	0	10	17	11	15	12	13	8	6	4	0	1
SAN DIEGO	5	2	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
SAN FRANCISCO BAY AREA	24	8	2	4	10	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY	7	13	4	5	24	10	3	0	2	0	1	0	0	0	0	0	0	0	0	0
SOUTH CENTRAL COAST	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH COAST	64	58	50	73	71	50	51	39	29	27	17	26	18	13	11	6	0	1	0	0

Table B-24

** Data for Lake Tahoe reflects the number of days above the State 8-Hr. Lake Tahoe Standard of 6 parts per million.*

Days Above National 8-Hour Standard

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0		
LAKE COUNTY					0	0	0													
LAKE TAHOE	28	10	12	9	5	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0
MOJAVE DESERT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOUNTAIN COUNTIES		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH CENTRAL COAST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH COAST	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0
NORTHEAST PLATEAU			1	0																
SACRAMENTO VALLEY	12	12	3	9	22	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0
SALTON SEA	0	0	0	0	0	0	0	0	0	9	15	9	10	8	11	6	6	3	0	1
SAN DIEGO	3	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
SAN FRANCISCO BAY AREA	21	8	1	4	9	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN VALLEY	7	11	4	6	18	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH CENTRAL COAST	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH COAST	54	49	40	65	67	42	41	34	19	19	14	19	13	10	7	3	0	1	0	0

Table B-25

Nitrogen Dioxide

Peak 1-Hour Indicator (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.079	0.073	0.076	0.073	0.074	0.078	0.076	0.078	0.062	0.061	0.062	0.062	0.061	0.060	0.057	0.058	0.068	0.063	0.062	0.062
MOJAVE DESERT	0.136	0.130	0.134	0.112	0.100	0.181	0.259	0.277	0.289	0.202	0.124	0.119	0.097	0.102	0.105	0.106	0.099	0.096	0.092	0.092
MOUNTAIN COUNTIES		0.046	0.046																	
NORTH CENTRAL COAST	0.072	0.083	0.083	0.077	0.072	0.071	0.068	0.062	0.064	0.064	0.062	0.059	0.059	0.059	0.054	0.046	0.045	0.046	0.046	0.050
NORTH COAST									0.054	0.053	0.053	0.053	0.049	0.050	0.054	0.053	0.052	0.042	0.045	0.044
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.109	0.112	0.115	0.123	0.117	0.115	0.122	0.128	0.126	0.115	0.106	0.101	0.095	0.091	0.107	0.097	0.095	0.085	0.089	0.091
SALTON SEA	0.124	0.085	0.083	0.084	0.089	0.092	0.091	0.088	0.088	0.153	0.182	0.178	0.178	0.150	0.145	0.170	0.161	0.153	0.147	0.128
SAN DIEGO	0.193	0.193	0.203	0.216	0.233	0.210	0.189	0.169	0.155	0.145	0.129	0.129	0.126	0.116	0.122	0.117	0.126	0.122	0.130	0.119
SAN FRANCISCO BAY AREA	0.196	0.189	0.188	0.167	0.162	0.156	0.160	0.155	0.141	0.116	0.119	0.114	0.111	0.101	0.108	0.105	0.109	0.100	0.075	0.079
SAN JOAQUIN VALLEY	0.144	0.148	0.145	0.144	0.151	0.156	0.134	0.132	0.132	0.131	0.127	0.119	0.115	0.100	0.107	0.106	0.109	0.107	0.106	0.097
SOUTH CENTRAL COAST	0.136	0.132	0.130	0.123	0.119	0.119	0.120	0.114	0.104	0.104	0.112	0.114	0.110	0.097	0.089	0.086	0.083	0.079	0.073	0.069
SOUTH COAST	0.317	0.303	0.311	0.335	0.322	0.324	0.312	0.311	0.285	0.241	0.229	0.242	0.237	0.202	0.185	0.213	0.216	0.200	0.161	0.150

Table B-26

Nitrogen Dioxide

Maximum 1-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.080	0.080	0.080	0.070	0.070	0.150	0.060	0.060	0.060	0.057	0.059	0.061	0.051	0.052	0.060	0.086	0.090	0.088	0.059	0.068
MOJAVE DESERT	0.140	0.150	0.130	0.100	0.120	0.190	0.350	0.240	0.360	0.138	0.140	0.087	0.107	0.196	0.113	0.105	0.102	0.101	0.095	0.103
MOUNTAIN COUNTIES		0.050	0.040															0.043	0.019	
NORTH CENTRAL COAST	0.090	0.110	0.070	0.070	0.070	0.060	0.060	0.070	0.070	0.067	0.054	0.060	0.056	0.085	0.054	0.071	0.042	0.049	0.053	0.139
NORTH COAST				0.030				0.080	0.050	0.079	0.078	0.044	0.061	0.052	0.066	0.042	0.052	0.080	0.053	0.037
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.130	0.120	0.100	0.180	0.130	0.160	0.240	0.190	0.120	0.111	0.099	0.145	0.092	0.101	0.110	0.085	0.172	0.090	0.102	0.146
SALTON SEA	0.080	0.080	0.080	0.110	0.090	0.090	0.090	0.090	0.090	0.227	0.217	0.164	0.128	0.257	0.286	0.192	0.139	0.138	0.189	0.108
SAN DIEGO	0.210	0.220	0.260	0.280	0.230	0.180	0.160	0.190	0.130	0.157	0.140	0.124	0.142	0.132	0.172	0.117	0.148	0.126	0.148	0.125
SAN FRANCISCO BAY AREA	0.190	0.160	0.170	0.160	0.150	0.150	0.150	0.110	0.120	0.107	0.116	0.108	0.118	0.098	0.128	0.114	0.108	0.080	0.081	0.073
SAN JOAQUIN VALLEY	0.160	0.190	0.150	0.210	0.210	0.160	0.130	0.190	0.160	0.144	0.119	0.110	0.103	0.112	0.108	0.099	0.115	0.107	0.092	0.083
SOUTH CENTRAL COAST	0.160	0.150	0.150	0.160	0.120	0.160	0.160	0.100	0.110	0.133	0.127	0.110	0.115	0.097	0.099	0.124	0.113	0.064	0.103	0.071
SOUTH COAST	0.350	0.330	0.420	0.540	0.340	0.280	0.380	0.300	0.260	0.247	0.239	0.250	0.200	0.255	0.307	0.214	0.251	0.262	0.163	0.157

Table B-27

Maximum Annual Average (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE	0.011	0.010	0.012	0.012		0.012	0.012		0.011	0.012	0.011	0.011	0.011	0.010	0.011	0.011	0.011	0.012	0.010	
MOJAVE DESERT	0.025	0.021	0.016	0.018	0.026	0.019	0.014	0.025	0.020	0.024	0.023	0.021	0.020	0.022	0.024	0.025	0.024	0.025	0.024	0.023
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.015	0.014	0.005	0.014	0.014	0.012	0.011	0.012	0.012	0.012		0.011	0.010	0.010	0.005	0.007	0.007	0.007	0.006	0.007
NORTH COAST										0.008	0.009		0.010	0.010	0.010	0.011	0.010	0.010	0.009	0.009
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.021	0.022	0.022	0.025	0.019	0.023	0.024	0.021	0.017	0.022	0.022	0.022	0.019	0.021	0.021	0.019	0.019	0.020	0.015	0.017
SALTON SEA	0.020		0.019	0.022	0.024	0.021	0.021		0.019	0.021	0.021	0.020		0.016	0.018	0.016	0.017	0.016	0.016	0.015
SAN DIEGO	0.032	0.030	0.032	0.035	0.031	0.029	0.029	0.027	0.023	0.024	0.026	0.022	0.024	0.023	0.026	0.024	0.022	0.022	0.021	0.023
SAN FRANCISCO BAY AREA	0.035	0.033	0.031	0.032	0.032	0.030	0.031	0.027	0.027	0.028	0.027	0.025	0.025	0.025	0.026	0.025	0.024	0.019	0.018	0.017
SAN JOAQUIN VALLEY	0.031	0.030	0.030	0.032	0.033	0.031	0.030	0.027	0.024	0.024	0.029	0.029	0.024	0.023	0.027	0.024	0.022	0.024	0.020	0.018
SOUTH CENTRAL COAST	0.030	0.022	0.017	0.024	0.027	0.025	0.024	0.022	0.023	0.022	0.024	0.019	0.020	0.021	0.022	0.020	0.019	0.017	0.015	0.014
SOUTH COAST	0.060	0.061	0.055	0.061	0.057	0.055	0.055	0.051	0.050	0.050	0.046	0.042	0.043	0.043	0.051	0.044	0.041	0.040	0.035	0.033

Table B-28

Oxides of Nitrogen (NOx)

Maximum 1-Hour Concentration (ppm)**

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS*																				
LAKE COUNTY*																				
LAKE TAHOE	0.240	0.210	0.190	0.220	0.290	0.270	0.190	0.180	0.120	0.139	0.132	0.140	0.109	0.128	0.126	0.190	0.216	0.188	0.280	0.208
MOJAVE DESERT	0.420	0.400	0.400	0.790	0.410	0.500	0.440	0.710	0.440	0.455	0.410	0.423	0.510	0.465	0.585	0.537	0.454	0.469	0.471	0.473
MOUNTAIN COUNTIES		0.080	0.060															0.055	0.051	0.082
NORTH CENTRAL COAST	0.240	0.180	0.230	0.310	0.240	0.220	0.220	0.240	0.210	0.239	0.277	0.295	0.257	0.223	0.238	0.143	0.154	0.164	0.140	0.224
NORTH COAST				0.050				0.210	0.290	0.573										
NORTHEAST PLATEAU*																				
SACRAMENTO VALLEY	0.580	0.470	0.390	0.790	0.788	0.920	0.700	0.770	0.730	0.737	0.571	0.604	0.698	0.618	0.582	0.541	0.648	0.991	0.520	0.392
SALTON SEA	0.270	0.230	0.210	0.210	0.320	0.270	0.230	0.220	0.220	0.917	0.918	0.835	0.677	0.758	0.773	0.822	0.793	0.785	0.656	0.681
SAN DIEGO	0.840	0.930	0.800	0.980	0.780	0.760	0.640	0.660	0.531	0.605	0.506	0.606	0.609	0.486	0.609	0.598	0.632	0.605	0.658	0.657
SAN FRANCISCO BAY AREA***	1.050	0.760	0.720	0.750	0.870	0.850	0.760	0.630	0.810	0.625	0.548	0.831	0.593	0.544	0.586	0.560	0.519	0.420	0.398	0.424
SAN JOAQUIN VALLEY	0.700	1.060	0.710	0.870	0.870	0.840	0.760	0.650	0.640	0.702	0.600	0.659	0.560	0.671	0.700	0.556	0.652	0.438	0.407	0.407
SOUTH CENTRAL COAST	0.790	0.700	0.810	0.680	0.600	0.600	0.630	0.570	0.470	0.561	0.575	0.823	0.454	0.536	0.550	0.430	0.276	0.314	0.395	0.273
SOUTH COAST	1.510	1.170	1.080	1.280	1.200	0.990	1.200	1.420	1.060	1.108	0.850	1.037	0.910	0.889	0.899	0.855	0.750	0.892	0.738	0.850

* No NOx data available
** All available data were used for the annual maximum 1-hour NOx.
*** SFB NOx for 1994-2003 was calculated using hourly NO + NO2

Table B-29

Maximum Annual Average (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS*																				
LAKE COUNTY*																				
LAKE TAHOE	0.021	0.021	0.022	0.021		0.022	0.022			0.018	0.016	0.015	0.015	0.012	0.014	0.015	0.015	0.015	0.013	
MOJAVE DESERT	0.047	0.042	0.027	0.044	0.049	0.022	0.032	0.046	0.037	0.048	0.047	0.043	0.037	0.047	0.055	0.051	0.049	0.053	0.050	0.049
MOUNTAIN COUNTIES**																				
NORTH CENTRAL COAST	0.023	0.020	0.006	0.022	0.021	0.023	0.022	0.021	0.020	0.019		0.017	0.017	0.015	0.008	0.011		0.011	0.010	0.010
NORTH COAST*																				
NORTHEAST PLATEAU*																				
SACRAMENTO VALLEY	0.047	0.044	0.039	0.045	0.043	0.056	0.055	0.042	0.029	0.047	0.043	0.045	0.042	0.043	0.047	0.045	0.038	0.042	0.027	0.033
SALTON SEA	0.027		0.023	0.028	0.030	0.026	0.026		0.025	0.026	0.033	0.028		0.021	0.037	0.021	0.022	0.033	0.028	0.03
SAN DIEGO	0.056	0.058	0.068	0.077	0.066	0.061	0.058	0.058	0.050	0.053	0.046	0.047	0.050	0.045	0.055	0.049		0.044	0.041	0.041
SAN FRANCISCO BAY AREA***	0.095	0.079	0.066	0.072	0.083	0.075		0.065	0.068	0.066	0.056	0.054	0.055	0.052	0.057	0.054	0.051	0.046	0.035	0.032
SAN JOAQUIN VALLEY	0.072	0.066	0.080	0.074	0.078	0.078	0.068	0.058	0.047	0.049	0.050	0.052	0.045	0.044	0.051	0.049	0.043	0.045	0.040	0.035
SOUTH CENTRAL COAST	0.071	0.063	0.028	0.040	0.061	0.039	0.051	0.052	0.049	0.052	0.041	0.042	0.043	0.045	0.048	0.034	0.018	0.027	0.025	0.022
SOUTH COAST	0.133	0.130	0.118	0.132	0.137	0.121	0.118	0.121	0.106	0.129	0.108	0.106	0.127	0.119	0.133	0.115	0.102	0.098	0.089	0.081

* No NOx data available
** No Valid Annual Averages
*** SFB NOx for 1994-2003 was calculated using hourly NO + NO2

Representative Days: The data collected must be representative according to the following definition. There must be no more than two missing hours in any of the three consecutive eight hour periods within a day. For an entire day, no more than two consecutive hours can be missed. Therefore, for an entire day, if there were three consecutive hours missed, the day would be invalidated. Representative Days were used for all years except 1994-2003.
Data Represenativeness: For representative statistics computed from all individual values, such as the mean of all hours, 75 percent of the values in the respective period are required. Data Representativeness of 75% was applied to daily (94-03), monthly, and annual values.

Table B-30

Sulfur Dioxide

Peak 1-Hour Indicator (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.04	0.03	0.03	0.07	0.06	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.04	0.05	0.04	0.03	0.01	0.01	0.01	0.02	0.03	0.03	0.03
NORTH COAST									0.01	0.01										
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.03	0.03		0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
SALTON SEA												0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.00	0.00
SAN DIEGO	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.08	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03
SAN FRANCISCO BAY AREA	0.07	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.05	0.04	0.05
SAN JOAQUIN VALLEY	0.09	0.09	0.08	0.07	0.06	0.06	0.04	0.04	0.03	0.02	0.02	0.03	0.03		0.01	0.02	0.02			
SOUTH CENTRAL COAST	0.34	0.32	0.32	0.25	0.16	0.16	0.14	0.13	0.13	0.03	0.16	0.17	0.16	0.16	0.14	0.14	0.14	0.16	0.14	0.13
SOUTH COAST	0.10	0.09	0.07	0.07	0.06	0.06	0.06	0.11	0.10	0.10	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03

Table B-31

Sulfur Dioxide

Maximum 24-Hour Concentration (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.01	0.01	0.00	0.02	0.03	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00
NORTH COAST				0.01				0.01	0.00	0.00										
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.01	0.01		0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00
SALTON SEA										0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00
SAN DIEGO	0.02	0.03	0.04	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02
SAN FRANCISCO BAY AREA	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.02	0.01	0.01
SAN JOAQUIN VALLEY	0.05	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.00	0.01		0.00	
SOUTH CENTRAL COAST	0.07	0.06	0.04	0.04	0.02	0.09	0.02	0.02	0.05	0.01	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.02	0.02	0.03
SOUTH COAST	0.04	0.04	0.02	0.04	0.02	0.04	0.02	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.04	0.02	0.02	0.01	0.02

Table B-32

Maximum Annual Average (ppm)

AIR BASIN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GREAT BASIN VALLEYS																				
LAKE COUNTY																				
LAKE TAHOE																				
MOJAVE DESERT	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOUNTAIN COUNTIES																				
NORTH CENTRAL COAST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NORTH COAST				0.00				0.00	0.00	0.00										
NORTHEAST PLATEAU																				
SACRAMENTO VALLEY	0.00	0.00		0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SALTON SEA										0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN DIEGO	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
SAN FRANCISCO BAY AREA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN JOAQUIN VALLEY	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00		0.00	
SOUTH CENTRAL COAST	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH COAST	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Table B-33

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APPENDIX C

Emissions, Air Quality, and Health Risk

for Ten Toxic Air Contaminants

Appendix C: *Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants*

List of Tables

List of Tables (continued)

Introduction

This appendix contains TAC emissions data for all counties in California. It also contains air quality and health risk data for the state as a whole, the five most populous air basins, and individual sites within these air basins. The five basins are the South Coast Air Basin, San Francisco Bay Area Air Basin, San Joaquin Valley Air Basin, San Diego Air Basin, and Sacramento Valley Air Basin. It is important to note that some counties are located in more than one air basin. For these counties, the data are provided for that portion of the county located in each air basin. The ten toxic air contaminants (TACs) presented here are the same as the TACs discussed in Chapter 5: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Based on available data, these TACs pose the most substantial health risks in California. There may be other TACs that pose a substantial risk, but for which data are not available.

The countywide emissions data represent tons per year from the 2005 emission inventory year. The data for stationary sources include emissions data from the air toxics "Hot Spots" Program. The toxic air contaminant emissions for each area-wide and mobile source category are calculated by applying a speciation profile, maintained by ARB staff, to the total organic gas and total particulate matter criteria pollutant emissions associated with that category.

For all source categories associated with diesel fuel combustion, all "PM" emitted from these sources was considered "diesel PM." The area-wide source emission estimates were made by either the local districts or the ARB staff. These estimates have been speciated for toxics. The other mobile source emission estimates are primarily from ARB's OFFROAD model, speciated for toxics. For the categories not currently included in the model, the emission estimates have been developed by either local districts or ARB staff. Districts may also provide estimates for categories normally developed by ARB staff. Finally, the on-road mobile source emission estimates are based on the current model, EMFAC 2002, version 2.2 (April 2003, with SCAG June 2002 activity data). Again, the emission estimates have been speciated for toxics.

Readers may note that the stationary source diesel PM emission estimates differ from those presented in previous editions of the almanac and in the ARB's October 2000 report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (Diesel Risk Reduction Plan). This is because they incorporate more recent data and have been calculated with updated methodologies developed for new regulations. These regulations are those that were recommended in the Diesel Risk Reduction Plan. The on-road mobile source emissions cited in the Diesel Risk Reduction Plan are based on an earlier version of EMFAC 2001 (EMFAC1.99(f) 6/26/00) and the other mobile inventory includes revised estimates for ship diesel PM emissions.

In addition to the emissions data, air quality and health risk data are available for 1990 through 2004. It is important to note that the data reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. Therefore, the ambient concentrations and health risks for other locations may be higher or lower. TAC air quality data are also collected by the local air districts and for special studies. However, for consistency, only data collected by the ARB are included here.

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Great Basin Valleys Air Basin

TAC	Alpine	Inyo	Mono
Acetaldehyde	9	16	36
Benzene	25	15	56
1,3-Butadiene	6	4	14
Carbon Tetrachloride	0	0	0
Chromium, Hexavalent	< .01	< .01	0.02
para-DiChlorobenzene	< 1	1	< 1
Formaldehyde	24	27	72
Methylene Chloride	< 1	2	1
Perchloroethylene	< 1	4	4
Diesel PM	0	17	12

Table C-1

Lake County Air Basin

TAC	Lake
Acetaldehyde	43
Benzene	72
1,3-Butadiene	16
Carbon Tetrachloride	0
Chromium, Hexavalent	< .01
para-DiChlorobenzene	4
Formaldehyde	84
Methylene Chloride	8
Perchloroethylene	13
Diesel PM	49

Table C-2

Lake Tahoe Air Basin

TAC	El Dorado[1]	Placer[1]
Acetaldehyde	42	21
Benzene	36	13
1,3-Butadiene	9	3
Carbon Tetrachloride	< .01	0
Chromium, Hexavalent	< .01	< .01
para-DiChlorobenzene	3	< 1
Formaldehyde	78	31
Methylene Chloride	5	4
Perchloroethylene	6	3
Diesel PM	38	14

Table C-3

[1] This Air Basin includes only a portion of this county.

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Mojave Desert Air Basin

TAC	Kern[1]	Los Angeles[1]	Riverside[1]	San Bernardino[1]
Acetaldehyde	112	63	5	162
Benzene	87	85	8	212
1,3-Butadiene	40	21	2	46
Carbon Tetrachloride	0.02	< .01	0	0.04
Chromium, Hexavalent	0.29	0.03	< .01	0.09
para-DiChlorobenzene	9	24	2	28
Formaldehyde	340	162	13	377
Methylene Chloride	16	102	7	77
Perchloroethylene	16	55	10	103
Diesel PM	145	216	13	697

Table C-4 [1] This Air Basin includes only a portion of this county.

Mountain Counties Air Basin

TAC	Amador	Calaveras	El Dorado	Mariposa	Nevada	Placer[1]	Plumas	Sierra	Tuolumne
Acetaldehyde	37	47	87	26	113	19	77	14	62
Benzene	49	69	84	38	84	22	149	36	95
1,3-Butadiene	12	22	19	9	22	6	47	11	41
Carbon Tetrachloride	0	0	0	0	0	0	0	0	0
Chromium, Hexavalent	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	0.08
para-DiChlorobenzene	2	3	9	1	7	2	1	< 1	4
Formaldehyde	69	90	141	49	172	35	172	36	128
Methylene Chloride	5	5	17	2	21	6	2	< 1	9
Perchloroethylene	5	4	19	3	9	5	4	< 1	10
Diesel PM	31	34	53	16	67	35	53	3	50

Table C-5 [1] This Air Basin includes only a portion of this county.

North Central Coast Air Basin

TAC	Monterey	San Benito	Santa Cruz
Acetaldehyde	124	17	65
Benzene	182	20	85
1,3-Butadiene	58	14	16
Carbon Tetrachloride	0	0	< .01
Chromium, Hexavalent	0.01	< .01	< .01
para-DiChlorobenzene	28	4	17
Formaldehyde	287	35	126
Methylene Chloride	72	9	54
Perchloroethylene	91	10	81
Diesel PM	379	62	131

Table C-6

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

North Coast Air Basin

TAC	Del Norte	Humboldt	Mendocino	Sonoma	Trinity
Acetaldehyde	19	90	71	53	21
Benzene	13	82	64	69	27
1,3-Butadiene	16	22	13	13	13
Carbon Tetrachloride	0	0	0	0	0
Chromium, Hexavalent	< .01	< .01	0.02	0.04	< .01
para-DiChlorobenzene	2	8	6	4	< 1
Formaldehyde	29	151	121	113	37
Methylene Chloride	4	18	14	13	2
Perchloroethylene	6	29	21	15	3
Diesel PM	19	196	141	239	11

Table C-7 [1] This Air Basin includes only a portion of this county.

Northeast Plateau Air Basin

TAC	Lassen	Modoc	Siskiyou
Acetaldehyde	66	22	88
Benzene	97	11	96
1,3-Butadiene	22	3	65
Carbon Tetrachloride	0	0	0
Chromium, Hexavalent	< .01	< .01	< .01
para-DiChlorobenzene	3	< 1	3
Formaldehyde	131	37	156
Methylene Chloride	4	< 1	6
Perchloroethylene	7	2	9
Diesel PM	60	52	120

Table C-8

Outer Continental Shelf Air Basin

TAC	Statewide
Acetaldehyde	18
Benzene	82
1,3-Butadiene	1
Carbon Tetrachloride	0
Chromium, Hexavalent	0
para-DiChlorobenzene	0
Formaldehyde	73
Methylene Chloride	0
Perchloroethylene	5
Diesel PM	6108

Table C-9

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

Sacramento Valley Air Basin

TAC	Butte	Colusa	Glenn	Placer[1]	Sacramento	Shasta	Solano[1]	Sutter	Tehama	Yolo	Yuba
Acetaldehyde	107	16	21	91	232	143	32	57	50	60	45
Benzene	124	34	39	108	343	139	53	87	35	58	47
1,3-Butadiene	32	7	17	22	66	39	12	17	7	12	16
Carbon Tetrachloride	0	0	0	0	0.05	0	0	0	< .01	0	0
Chromium, Hexavalent	< .01	< .01	< .01	< .01	0.02	< .01	< .01	< .01	< .01	< .01	< .01
para-DiChlorobenzene	15	2	2	17	89	12	9	6	4	12	4
Formaldehyde	220	61	47	199	511	255	74	159	80	123	112
Methylene Chloride	32	2	3	54	179	21	19	10	7	26	7
Perchloroethylene	34	3	5	38	261	33	17	13	11	26	9
Diesel PM	224	71	84	195	745	263	120	183	118	296	80

Table C-10 [1] This Air Basin includes only a portion of this county.

Salton Sea Air Basin

TAC	Imperial	Riverside[1]
Acetaldehyde	70	38
Benzene	134	71
1,3-Butadiene	33	14
Carbon Tetrachloride	0	< .01
Chromium, Hexavalent	0.06	< .01
para-DiChlorobenzene	12	24
Formaldehyde	182	100
Methylene Chloride	19	111
Perchloroethylene	28	50
Diesel PM	263	157

Table C-11 [1] This Air Basin includes only a portion of this county.

San Diego Air Basin

TAC	San Diego
Acetaldehyde	497
Benzene	849
1,3-Butadiene	190
Carbon Tetrachloride	0.12
Chromium, Hexavalent	0.24
para-DiChlorobenzene	203
Formaldehyde	1240
Methylene Chloride	370
Perchloroethylene	657
Diesel PM	1798

Table C-12

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

San Francisco Bay Area Air Basin

TAC	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano[1]	Sonoma[1]
Acetaldehyde	334	177	54	37	145	151	270	111	77
Benzene	400	318	111	62	189	221	467	115	113
1,3-Butadiene	77	55	24	13	36	53	93	41	23
Carbon Tetrachloride	< .01	0.93	< .01	< .01	0	< .01	< .01	< .01	< .01
Chromium, Hexavalent	0.02	0.01	< .01	< .01	< .01	0.02	0.02	0.02	< .01
para-DiChlorobenzene	100	67	17	9	53	49	116	19	27
Formaldehyde	711	479	126	82	323	373	647	315	152
Methylene Chloride	212	124	33	17	105	103	263	35	64
Perchloroethylene	167	96	32	13	89	92	178	25	39
Diesel PM	1369	692	137	107	674	403	875	144	150

Table C-13 [1] This Air Basin includes only a portion of this county.

San Joaquin Valley Air Basin

TAC	Fresno	Kern[1]	Kings	Madera	Merced	San Joaquin	Stanislaus	Tulare
Acetaldehyde	251	193	108	65	78	168	124	150
Benzene	304	742	69	82	93	221	152	157
1,3-Butadiene	76	51	40	24	38	51	49	109
Carbon Tetrachloride	< .01	< .01	0	0	0	0	0	0
Chromium, Hexavalent	0.05	0.04	0.02	< .01	< .01	0.03	0.03	0.01
para-DiChlorobenzene	58	45	10	10	16	42	34	27
Formaldehyde	558	1184	316	161	174	382	273	335
Methylene Chloride	129	68	15	16	26	74	61	45
Perchloroethylene	183	94	23	28	43	119	94	68
Diesel PM	977	726	181	213	298	668	441	509

Table C-14 [1] This Air Basin includes only a portion of this county.

South Central Coast Air Basin

TAC	San Luis Obispo	Santa Barbara	Ventura
Acetaldehyde	89	114	135
Benzene	113	341	232
1,3-Butadiene	30	54	54
Carbon Tetrachloride	0	< .01	0.05
Chromium, Hexavalent	< .01	< .01	0.03
para-DiChlorobenzene	19	28	53
Formaldehyde	200	585	318
Methylene Chloride	45	108	161
Perchloroethylene	67	83	79
Diesel PM	234	303	492

Table C-15

County Emissions (tons/year) for Ten Toxic Air Contaminants by Air Basin

South Coast Air Basin

TAC	Los Angeles[1]	Orange	Riverside[1]	San Bernardino[1]
Acetaldehyde	992	325	213	214
Benzene	2141	726	356	383
1,3-Butadiene	410	139	69	78
Carbon Tetrachloride	0.11	0.02	0.09	0.01
Chromium, Hexavalent	0.08	0.04	0.02	0.03
para-DiChlorobenzene	623	197	90	94
Formaldehyde	2664	908	529	522
Methylene Chloride	2137	933	196	239
Perchloroethylene	1224	420	182	185
Diesel PM	4654	1376	966	750

Table C-16

[1] This Air Basin includes only a portion of this county.

Air Quality and Health Risk

The air quality and health risk data in the following tables cover the time period of 1990 through 2004. Annual average concentrations and health risks are listed at the statewide level, the air basin level, and site level for California's five most populous air basins. The ten TACs presented here are ones that pose the most substantial health risk in California based on available data: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel PM. It is important to note that there may be other compounds that pose a substantial risk, but for which data are not available.

The ambient data for all TACs except diesel PM are based on concentrations measured at sites in California's TAC monitoring network. The annual average concentration is calculated as the mean of the monthly means, and the concentration is available only if a full year of data is available. The associated health risk is based on the annual average concentration and represents the estimated number of excess cancer cases per million people exposed to the specified concentration for 70 years.

For diesel PM, the ARB previously made a preliminary estimation of concentrations for the State's 15 air basins using a PM-based exposure method. The method uses the ARB emission inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies with chemical speciation of ambient data. These data were used, along with receptor modeling techniques, to estimate statewide outdoor concentrations of diesel PM. Details on the method and the resulting estimates can be found in the ARB report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles," (October 2000).

Numerous factors influence the ambient TAC measurements, and a number of assumptions are embodied in the summary statistics. These factors are described in Chapter 1 under the heading "Interpreting the Emission and Air Quality Statistics." These factors must be considered when using the statistics presented here. Finally, it is important to note that the data provided reflect concentrations measured at a specific location or, in the case of the air basin summary data, spatially averaged concentrations. The ambient concentrations and health risks for other locations may be higher or lower.

California

Statewide Summary

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.73	1.97	1.54	1.76	1.52	0.61	1.34	1.16	1.08	1.29	1.00	1.10	1.18	1.19	1.12
	Health Risk	8	10	7	9	7	3	7	6	5	6	5	5	6	6	5
Benzene	Annual Avg	2.57	2.14	1.71	1.50	1.58	1.31	0.93	0.85	0.86	0.85	0.71	0.61	0.63	0.57	0.46
	Health Risk	238	198	158	139	146	121	86	79	80	79	66	56	58	52	43
1,3-Butadiene	Annual Avg	0.41	0.34	0.32	0.39	0.34	0.31	0.26	0.23	0.25	0.23	0.18	0.17	0.17	0.12	0.11
	Health Risk	155	128	120	147	129	117	98	88	92	85	69	65	65	44	40
Carbon Tetrachloride	Annual Avg	0.13	0.13		0.11		0.10	0.08		0.11		0.09	0.09	0.09	0.09	
	Health Risk	35	34		28		26	21		30		25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.27	0.22	0.21	0.29	0.13	0.12	0.11	0.11	0.13	0.13	0.10	0.09	0.10
	Health Risk			40	33	31	43	20	18	17	17	19	19	15	14	16
para-Dichlorobenzene	Annual Avg		0.14	0.14	0.14	0.13	0.14	0.12	0.14			0.12	0.14	0.16	0.16	0.16
	Health Risk		9	9	9	9	9	8	9			8	9	11	11	11
Formaldehyde	Annual Avg	2.18	2.07	1.65	2.08	2.18	2.93	3.38	2.89	2.64	3.20	2.55	3.18	3.50	3.15	2.69
	Health Risk	16	15	12	15	16	22	25	21	19	24	19	23	26	23	20
Methylene Chloride	Annual Avg	1.09	1.27	0.75	0.93	0.79	0.77	0.66	0.66	0.62	0.66	0.67	0.36	0.28	0.28	0.25
	Health Risk	4	4	3	3	3	3	2	2	2	2	2	1	1	1	<1
Perchloroethylene	Annual Avg	0.28	0.27	0.21	0.27	0.18	0.17	0.13	0.12	0.11		0.12	0.09	0.08	0.06	0.05
	Health Risk	11	11	8	11	7	7	5	5	5		5	4	3	2	2
Diesel PM***	Annual Avg	(3.0)					(2.2)					(1.8)				
	Health Risk	(900)					(660)					(540)				
Average Statewide Health Risk		**467**	**409**	**359**	**394**	**348**	**350**	**272**	**228**	**250**	**212**	**217**	**207**	**208**	**178**	**136**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-17

South Coast Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	2.46	3	2.46	2.67	2.3	0.97	2.08	1.77	1.54	1.63	1.26	1.47	1.41	1.47	1.46
	Health Risk	12	15	12	13	11	5	10	9	7	8	6	7	7	7	7
Benzene	Annual Avg	3.42	2.91	2.61	2.17	2.4	1.89	1.45	1.34	1.25	1.2	0.97	0.86	0.769	0.745	0.589
	Health Risk	317	269	242	201	222	175	134	124	116	111	90	80	71	69	55
1,3-Butadiene	Annual Avg	0.532	0.452	0.498	0.565	0.497	0.459	0.39	0.378	0.354	0.328	0.251	0.251	0.211	0.147	0.143
	Health Risk	200	170	187	212	187	173	146	142	133	123	94	94	79	55	54
Carbon Tetrachloride	Annual Avg	0.136	0.134		0.105		0.102	0.079		0.114		0.096	0.086	0.092	0.093	
	Health Risk	36	35		28		27	21		30		25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.39	0.29	0.29	0.46	0.18	0.17	0.15	0.14	0.18		0.179	0.158	0.177
	Health Risk			59	43	43	69	27	25	22	22	27		27	24	27
para-Dichlorobenzene	Annual Avg		0.17	0.19	0.17	0.13	0.17	0.11	0.13			0.13	0.15	0.16	0.17	0.16
	Health Risk		11	13	11	8	11	7	9			9	10	11	11	11
Formaldehyde	Annual Avg	2.92	3.08	2.22	3.22	3.14	3.57	5.06	4.47	3.79	4.06	3.13	4.13	4.16	3.83	3.76
	Health Risk	22	23	16	24	23	26	37	33	28	30	23	30	31	28	28
Methylene Chloride	Annual Avg	1.86	1.51	0.9	1.23	1.1	1.28	0.95	1.14	0.85	0.92	0.83	0.63	0.57	0.59	0.57
	Health Risk	6	5	3	4	4	4	3	4	3	3	3	2	2	2	2
Perchloroethylene	Annual Avg	0.576	0.547	0.412	0.448	0.393	0.364	0.32	0.274	0.259		0.207	0.176	0.146	0.105	0.082
	Health Risk	23	22	16	18	16	15	13	11	10		8	7	6	4	3
Diesel PM***	Annual Avg	(3.6)					(2.7)					(2.4)				
	Health Risk	(1080)					(810)					(720)				
Average Basin Health Risk		**616**	**550**	**548**	**554**	**514**	**505**	**398**	**357**	**349**	**297**	**285**	**253**	**258**	**225**	**187**

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-18

South Coast Air Basin

Los Angeles County: Azusa

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg											1.1	1.31		1.25	1.53
	Health Risk											5	6		6	7
Benzene	Annual Avg											0.69		0.621	0.598	0.432
	Health Risk											64		57	55	40
1,3-Butadiene	Annual Avg											0.146		0.135	0.076	0.076
	Health Risk											55		51	29	29
Carbon Tetrachloride	Annual Avg											0.093		0.09	0.095	
	Health Risk											24		24	25	
Chromium, Hexavalent	Annual Avg											0.12			0.09	0.073
	Health Risk											19			14	11
para-Dichlorobenzene	Annual Avg											0.1		0.15	0.15	0.15
	Health Risk											7		10	10	10
Formaldehyde	Annual Avg											3.05	3.8		3.45	3.04
	Health Risk											22	28		25	22
Methylene Chloride	Annual Avg											1.32		1	0.96	1.43
	Health Risk											5		3	3	5
Perchloroethylene	Annual Avg											0.183		0.153	0.109	0.063
	Health Risk											7		6	4	3
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk												**208**	**34**	**151**	**171**	**127**

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-19

South Coast Air Basin

Los Angeles County: Burbank - West Palm Avenue

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	3.16	3.89		3.06	2.46	0.79			1.94	2.7	1.7	1.93	1.96		1.77
	Health Risk	15	19		15	12	4			9	13	8	9	10		9
Benzene	Annual Avg	4.79	3.91	3.44	2.63	3.33	2.45	1.91	1.48	1.66	1.64	1.27	1.06	1.01		0.754
	Health Risk	444	362	319	244	308	227	177	137	154	151	117	98	93		70
1,3-Butadiene	Annual Avg	0.782	0.623	0.725	0.749	0.752	0.605	0.512	0.421	0.483	0.483	0.345	0.328	0.283		0.18
	Health Risk	294	234	272	282	283	227	192	158	182	181	130	123	106		68
Carbon Tetrachloride	Annual Avg	0.141	0.133				0.104	0.082		0.114		0.094	0.086	0.091		
	Health Risk	37	35				28	22		30		25	23	24		
Chromium, Hexavalent	Annual Avg			0.65	0.37	0.43	1.24			0.23	0.2	0.19		0.123		0.113
	Health Risk			97	55	64	186			34	29	28		18		17
para-Dichlorobenzene	Annual Avg		0.23	0.22	0.19	0.14	0.2	0.1	0.11			0.13	0.15	0.17		0.17
	Health Risk		15	15	12	9	13	7	7			8	10	11		11
Formaldehyde	Annual Avg	4.05	3.59		3.66	3.92	4.58			4.72	6.07	4.14	4.87	5.48		3.85
	Health Risk	30	26		27	29	34			35	45	30	36	40		28
Methylene Chloride	Annual Avg	3.25	1.69	1.42	2.01	1.94	1.82	1.41	1.11	1.07		0.8	0.6	0.6		0.41
	Health Risk	11	6	5	7	7	6	5	4	4		3	2	2		1
Perchloroethylene	Annual Avg	1.19	0.785	0.609	0.62	0.663	0.487	0.44	0.365	0.503		0.368	0.296	0.247		0.151
	Health Risk	48	31	24	25	26	19	18	15	20		15	12	10		6
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**879**	**728**	**732**	**667**	**738**	**744**	**421**	**321**	**468**	**419**	**364**	**313**	**314**		**210**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-20

South Coast Air Basin

Los Angeles County: North Main Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	2.68	2.78	2.5	2.89	2.35	1.28	2.33			1.43	0.84	1.45	1.3	1.39	1.24
	Health Risk	13	13	12	14	11	6	11			7	4	7	6	7	6
Benzene	Annual Avg	3.5	3.25	2.97	2.54	2.45	2.24	1.86		1.36	1.5	1.04	1.03		0.853	0.677
	Health Risk	324	301	275	235	227	207	173		126	139	97	95		79	63
1,3-Butadiene	Annual Avg	0.6	0.547	0.643	0.733	0.588	0.599	0.542		0.421	0.432	0.296	0.313		0.186	0.195
	Health Risk	226	206	242	276	221	225	204		158	162	111	118		70	73
Carbon Tetrachloride	Annual Avg	0.138	0.134				0.103	0.079		0.112		0.098	0.086		0.095	
	Health Risk	36	35				27	21		30		26	23		25	
Chromium, Hexavalent	Annual Avg				0.24	0.27	0.23	0.17			0.11	0.13		0.133	0.07	
	Health Risk				36	40	35	25			16	19		20	11	
para-Dichlorobenzene	Annual Avg		0.19	0.22	0.19	0.16	0.19	0.12				0.16	0.17		0.16	0.17
	Health Risk		13	14	12	10	13	8				11	11		10	11
Formaldehyde	Annual Avg	3.5	3	2.3	3.23	3.54	4.13	5.87			3.88	2.42	4.3	4.32	3.79	5.69
	Health Risk	26	22	17	24	26	30	43			29	18	32	32	28	42
Methylene Chloride	Annual Avg	1.28	2.72	0.68	1.05	1.06	1.51	1.1		0.8	1.2	0.68	0.74		0.59	0.5
	Health Risk	4	9	2	4	4	5	4		3	4	2	3		2	2
Perchloroethylene	Annual Avg	0.551	0.603	0.536	0.588	0.503	0.574	0.502		0.232		0.187	0.177		0.109	0.088
	Health Risk	22	24	21	24	20	23	20		9		7	7		4	4
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**651**	**623**	**583**	**625**	**559**	**571**	**509**		**326**	**357**	**295**	**296**	**58**	**236**	**201**

* Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-21

South Coast Air Basin

Los Angeles County: North Long Beach

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	2.49	2.52		2.36	2.18	0.81		1.43			1.16	1.11		1.06	1.19
	Health Risk	12	12		11	11	4		7			6	5		5	6
Benzene	Annual Avg	3.53	2.45	2.6	1.99	2.04	1.69		1.24	1.16	1.11	1		0.705	0.705	0.554
	Health Risk	327	227	241	185	188	157		115	108	103	92		65	65	51
1,3-Butadiene	Annual Avg	0.592	0.439	0.523	0.575	0.447	0.448		0.364	0.339	0.323	0.278		0.198	0.142	0.144
	Health Risk	223	165	197	216	168	169		137	127	121	104		75	53	54
Carbon Tetrachloride	Annual Avg	0.139	0.129				0.099			0.118		0.097		0.092	0.092	
	Health Risk	37	34				26			31		26		24	24	
Chromium, Hexavalent	Annual Avg			0.44	0.34	0.22	0.25		0.15	0.11	0.12	0.12		0.078		0.09
	Health Risk			66	51	33	38		22	16	18	18		12		14
para-Dichlorobenzene	Annual Avg		0.17	0.26	0.19	0.12	0.17		0.16			0.13		0.18	0.2	0.15
	Health Risk		11	17	13	8	11		10			8		12	13	10
Formaldehyde	Annual Avg	2.97	2.76		3.22	3.06	3.29		3.68			2.88	2.96		2.79	2.78
	Health Risk	22	20		24	23	24		27			21	22		21	20
Methylene Chloride	Annual Avg	2.05	0.88	1	1.15	0.84	0.98		0.74	0.6		0.65		0.27	0.31	0.24
	Health Risk	7	3	3	4	3	3		3	2		2		<1	1	<1
Perchloroethylene	Annual Avg	0.477	0.355	0.349	0.433	0.321	0.318		0.227	0.193		0.168		0.095	0.076	0.057
	Health Risk	19	14	14	17	13	13		9	8		7		4	3	2
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**647**	**486**	**538**	**521**	**447**	**445**		**330**	**292**	**242**	**284**	**27**	**192**	**184**	**157**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-22

South Coast Air Basin

Riverside County: Riverside - Rubidoux

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.87	2.54	1.86	2.19	2.08	0.89	1.84			1.36	1.49	1.58	1.66	1.66	1.59
	Health Risk	9	12	9	11	10	4	9			7	7	8	8	8	8
Benzene	Annual Avg	2.55	2.22	1.9	1.77	2.01	1.45	1.03			0.87	0.85	0.685		0.623	0.526
	Health Risk	236	206	176	164	186	134	95			80	79	63		58	49
1,3-Butadiene	Annual Avg	0.34	0.312	0.292	0.379	0.363	0.332	0.267			0.208	0.193	0.175		0.118	0.121
	Health Risk	128	117	110	143	136	125	100			78	72	66		44	45
Carbon Tetrachloride	Annual Avg	0.131	0.136				0.102	0.079				0.096	0.086		0.093	
	Health Risk	34	36				27	21				25	23		24	
Chromium, Hexavalent	Annual Avg			0.33	0.33	0.36	0.38	0.22			0.19	0.35		0.41	0.348	0.485
	Health Risk			50	50	55	56	33			29	52		62	52	73
para-Dichlorobenzene	Annual Avg		0.13	0.13	0.16	0.12	0.17	0.11				0.14	0.15		0.17	0.16
	Health Risk		9	8	10	8	11	7				9	10		12	11
Formaldehyde	Annual Avg	1.75	2.7	1.53	2.73	2.5	2.65	4.15			3.55	3.17	4.73	4.36	4.18	3.46
	Health Risk	13	20	11	20	18	19	31			26	23	35	32	31	25
Methylene Chloride	Annual Avg		0.69	0.6	1.1	0.93	0.98	0.83			0.58	0.69	0.44		0.45	0.29
	Health Risk		2	2	4	3	3	3			2	2	2		2	1
Perchloroethylene	Annual Avg	0.237	0.276	0.201	0.198	0.191	0.177	0.175				0.129	0.112		0.06	0.051
	Health Risk	9	11	8	8	8	7	7				5	4		2	2
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**429**	**413**	**374**	**410**	**424**	**386**	**306**			**222**	**274**	**211**	**102**	**233**	**214**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-23

South Coast Air Basin

San Bernardino County: Fontana - Arrow Highway

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg															
	Health Risk															
Benzene	Annual Avg									0.98						
	Health Risk									91						
1,3-Butadiene	Annual Avg									0.244						
	Health Risk									92						
Carbon Tetrachloride	Annual Avg									0.114						
	Health Risk									30						
Chromium, Hexavalent	Annual Avg															
	Health Risk															
para-Dichlorobenzene	Annual Avg															
	Health Risk															
Formaldehyde	Annual Avg															
	Health Risk															
Methylene Chloride	Annual Avg									0.59						
	Health Risk									2						
Perchloroethylene	Annual Avg									0.179						
	Health Risk									7						
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk										**222**						

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-24

South Coast Air Basin

San Bernardino County: Upland - San Bernardino Road

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	2.12	3.28	2.36	2.84	2.42	1.09	2.13								
	Health Risk	10	16	11	14	12	5	10								
Benzene	Annual Avg	2.73	2.7	2.14	1.92	2.15	1.62	1.11	1.11							
	Health Risk	253	250	198	178	199	150	103	103							
1,3-Butadiene	Annual Avg	0.348	0.341	0.308	0.391	0.336	0.312	0.257	0.254							
	Health Risk	131	128	116	147	126	117	97	95							
Carbon Tetrachloride	Annual Avg	0.133	0.137		0.103		0.1	0.075								
	Health Risk	35	36		27		26	20								
Chromium, Hexavalent	Annual Avg			0.22	0.16	0.16	0.2	0.12								
	Health Risk			33	24	24	30	17								
para-Dichlorobenzene	Annual Avg		0.13	0.14	0.14	0.1	0.13	0.1	0.14							
	Health Risk		9	9	9	7	9	7	9							
Formaldehyde	Annual Avg	2.35	3.34	1.98	3.25	2.67	3.21	5.2								
	Health Risk	17	25	15	24	20	24	38								
Methylene Chloride	Annual Avg	1.41	1.59	0.82	0.87	0.72	1.13	0.66	1.7							
	Health Risk	5	6	3	3	3	4	2	6							
Perchloroethylene	Annual Avg	0.423	0.717	0.364	0.398	0.286	0.263	0.199	0.206							
	Health Risk	17	29	15	16	11	11	8	8							
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**468**	**499**	**400**	**442**	**402**	**376**	**302**	**221**							

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-25

San Francisco Bay Area Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.3	1.4	1.03	1.31	1.17	0.42	0.83	0.73	0.65	0.76	0.68	0.73	0.63	0.74	0.74
	Health Risk	6	7	5	6	6	2	4	4	3	4	3	4	3	4	4
Benzene	Annual Avg	2.18	1.82	1.49	1.49	1.4	1.26	0.71	0.61	0.71	0.6	0.56	0.425	0.454	0.439	0.372
	Health Risk	202	169	138	138	129	116	66	56	66	55	52	39	42	41	34
1,3-Butadiene	Annual Avg	0.359	0.287	0.275	0.367	0.287	0.277	0.218	0.187	0.217	0.17	0.149	0.133	0.137	0.098	0.09
	Health Risk	135	108	103	138	108	104	82	70	82	64	56	50	51	37	34
Carbon Tetrachloride	Annual Avg	0.128	0.125		0.108		0.1	0.078				0.094	0.087	0.089	0.095	
	Health Risk	34	33		29		26	21				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.23	0.2	0.19	0.25	0.13	0.12	0.1	0.1	0.12		0.074	0.096	0.091
	Health Risk			34	29	29	37	19	17	15	15	18		11	14	14
para-Dichlorobenzene	Annual Avg		0.12	0.12	0.12	0.11	0.13	0.14	0.12			0.11	0.14	0.15	0.15	0.17
	Health Risk		8	8	8	7	8	9	8			7	9	10	10	11
Formaldehyde	Annual Avg	1.87	1.73	1.43	1.56	1.66	2.06	2.62	1.85	1.76	2.09	1.77	2.32	2.57	2.22	1.71
	Health Risk	14	13	11	11	12	15	19	14	13	15	13	17	19	16	13
Methylene Chloride	Annual Avg	1.04	2.32	0.65	0.72	0.59	0.6	0.58	0.55			0.53	0.27	0.22	0.22	0.14
	Health Risk	4	8	2	2	2	2	2	2			2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.204	0.232	0.169	0.128	0.082	0.094	0.067	0.071			0.078	0.059	0.052	0.039	0.035
	Health Risk	8	9	7	5	3	4	3	3			3	2	2	2	1
Diesel PM***	Annual Avg	(2.5)					(1.9)					(1.6)				
	Health Risk	(750)					(570)					(480)				
Average Basin Health Risk		**403**	**355**	**308**	**366**	**296**	**314**	**225**	**174**	**179**	**153**	**179**	**144**	**162**	**149**	**111**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-26

San Francisco Bay Area Air Basin

Alameda County: Fremont - Chapel Way

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.28	1.6	1.02	1.28	1.23	0.35	0.88	0.65	0.72					0.69	0.69
	Health Risk	6	8	5	6	6	2	4	3	4					3	3
Benzene	Annual Avg	1.92	1.67	1.21	1.35	1.25	1.24	0.58		0.76	0.61	0.53	0.439	0.418	0.356	0.286
	Health Risk	178	155	112	125	116	115	54		71	57	49	41	39	33	26
1,3-Butadiene	Annual Avg	0.283	0.259	0.193	0.321	0.252	0.27	0.199		0.238	0.176	0.136	0.132	0.116	0.078	0.049
	Health Risk	106	97	72	120	95	101	75		90	66	51	50	43	29	19
Carbon Tetrachloride	Annual Avg	0.131	0.127		0.105		0.101	0.076				0.095	0.085	0.089	0.096	
	Health Risk	35	34		28		27	20				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.2	0.19	0.21	0.2	0.11		0.1	0.1	0.1			0.045	0.053
	Health Risk			30	28	32	30	16		15	15	16			7	8
para-Dichlorobenzene	Annual Avg			0.11	0.11	0.1	0.12	0.1				0.1	0.13	0.15	0.16	0.15
	Health Risk			7	7	7	8	7				7	9	10	11	10
Formaldehyde	Annual Avg	1.84	1.98	1.3	1.37	1.78	2.02	2.16	1.79	1.96					2.15	1.46
	Health Risk	14	15	10	10	13	15	16	13	14					16	11
Methylene Chloride	Annual Avg	0.76	0.58	0.52	0.83	0.5	0.62	0.5				0.5	0.28	0.23	0.3	0.1
	Health Risk	3	2	2	3	2	2	2				2	1	<1	1	<1
Perchloroethylene	Annual Avg	0.189	0.21	0.134	0.114	0.086	0.118	0.069				0.083	0.056	0.05	0.039	0.029
	Health Risk	8	8	5	5	3	5	3				3	2	2	2	1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**350**	**319**	**243**	**332**	**274**	**305**	**197**	**16**	**194**	**138**	**153**	**126**	**118**	**127**	**78**

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-27

San Francisco Bay Area Air Basin

Contra Costa County: Concord - 2975 Treat Boulevard

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.41			1.39	1.46	0.62	0.86	0.76		0.87					
	Health Risk	7			7	7	3	4	4		4					
Benzene	Annual Avg	1.84	1.58	1.41	1.13	1.08	1.09	0.48	0.56	0.57	0.57					
	Health Risk	171	147	130	105	100	101	44	52	53	53					
1,3-Butadiene	Annual Avg	0.315	0.265	0.253	0.305	0.232	0.242	0.149	0.176	0.192	0.155					
	Health Risk	118	100	95	114	87	91	56	66	72	58					
Carbon Tetrachloride	Annual Avg	0.13	0.125		0.108		0.102	0.082								
	Health Risk	34	33		29		27	22								
Chromium, Hexavalent	Annual Avg				0.19	0.18	0.21	0.11	0.11		0.1					
	Health Risk				28	27	32	16	17		15					
para-Dichlorobenzene	Annual Avg			0.15	0.13	0.14	0.13	0.13	0.14							
	Health Risk			10	8	9	9	8	9							
Formaldehyde	Annual Avg	1.99			1.99	1.69	2.21	2.3	2.05		2.64					
	Health Risk	15			15	12	16	17	15		19					
Methylene Chloride	Annual Avg	0.67	0.51	0.66	0.54	0.54	0.55	0.55	0.5							
	Health Risk	2	2	2	2	2	2	2	2							
Perchloroethylene	Annual Avg	0.337	0.419	0.39	0.204	0.098	0.147	0.082	0.102							
	Health Risk	13	17	16	8	4	6	3	4							
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**360**	**299**	**253**	**316**	**248**	**287**	**172**	**169**	**125**	**149**					

* Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-28

San Francisco Bay Area Air Basin

Contra Costa County: Richmond - 13th Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg			0.78		0.92	0.36	0.59								
	Health Risk			4		4	2	3								
Benzene	Annual Avg		1.92	1.54	1.76	1.7	1.44	1								
	Health Risk		177	143	163	157	133	92								
1,3-Butadiene	Annual Avg		0.272	0.26	0.393	0.308	0.3	0.251								
	Health Risk		102	98	148	116	113	94								
Carbon Tetrachloride	Annual Avg		0.123		0.11		0.097	0.078								
	Health Risk		33		29		25	21								
Chromium, Hexavalent	Annual Avg			0.19		0.15	0.26	0.13								
	Health Risk			28		23	39	19								
para-Dichlorobenzene	Annual Avg		0.14	0.12	0.12	0.1	0.12	0.19								
	Health Risk		9	8	8	7	8	13								
Formaldehyde	Annual Avg			1.08		1.32	2.22	4.27								
	Health Risk			8		10	16	31								
Methylene Chloride	Annual Avg		0.62	0.54	0.67	0.5	0.54	0.65								
	Health Risk		2	2	2	2	2	2								
Perchloroethylene	Annual Avg		0.147	0.093	0.092	0.056	0.043	0.03								
	Health Risk		6	4	4	2	2	1								
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk			**329**	**295**	**354**	**321**	**340**	**276**								

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-29

San Francisco Bay Area Air Basin

Contra Costa County: San Pablo - El Portal

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg										0.55					
	Health Risk										3					
Benzene	Annual Avg									0.56	0.42					
	Health Risk									52	39					
1,3-Butadiene	Annual Avg									0.148	0.118					
	Health Risk									56	45					
Carbon Tetrachloride	Annual Avg															
	Health Risk															
Chromium, Hexavalent	Annual Avg										0.1					
	Health Risk										15					
para-Dichlorobenzene	Annual Avg															
	Health Risk															
Formaldehyde	Annual Avg										1.24					
	Health Risk										9					
Methylene Chloride	Annual Avg															
	Health Risk															
Perchloroethylene	Annual Avg															
	Health Risk															
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk										**108**	**111**					

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-30

San Francisco Bay Area Air Basin

San Francisco County: San Francisco - Arkansas Street

TAC	Conc.*/Risk**	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
		Annual Average Concentrations and Health Risks														
Acetaldehyde	Annual Avg	1.32				0.98	0.4		0.75	0.54			0.57	0.54	0.68	0.69
	Health Risk	6				5	2		4	3			3	3	3	3
Benzene	Annual Avg		1.49	1.25		1.07	0.95	0.53	0.51	0.63	0.65	0.48	0.376		0.386	0.329
	Health Risk		138	116		99	88	49	48	59	61	45	35		36	30
1,3-Butadiene	Annual Avg		0.252	0.234		0.259	0.226	0.181	0.165	0.215	0.173	0.128	0.113		0.084	0.083
	Health Risk		95	88		97	85	68	62	81	65	48	42		32	31
Carbon Tetrachloride	Annual Avg		0.124				0.1	0.078				0.095	0.087		0.094	
	Health Risk		33				26	21				25	23		25	
Chromium, Hexavalent	Annual Avg				0.19	0.18	0.25	0.12	0.13	0.1		0.12		0.088	0.145	0.13
	Health Risk				29	26	37	18	19	15		18		13	22	20
para-Dichlorobenzene	Annual Avg		0.15	0.13		0.1	0.15	0.12	0.12			0.11	0.14		0.15	0.19
	Health Risk		10	9		7	10	8	8			7	9		10	13
Formaldehyde	Annual Avg	1.71				1.33	1.58		1.62	1.45			1.51	2.03	1.71	1.54
	Health Risk	13				10	12		12	11			11	15	13	11
Methylene Chloride	Annual Avg		3.22	0.88		0.6	0.63	0.66	0.5			0.6	0.26		0.17	0.17
	Health Risk		11	3		2	2	2	2			2	<1		<1	<1
Perchloroethylene	Annual Avg		0.229	0.13		0.105	0.092	0.084	0.065			0.068	0.074		0.038	0.04
	Health Risk		9	5		4	4	3	3			3	3		1	2
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**19**	**296**	**221**	**29**	**250**	**266**	**169**	**158**	**169**	**126**	**148**	**126**	**31**	**142**	**110**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-31

San Francisco Bay Area Air Basin

Santa Clara County: San Jose - 4th Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.53	1.55	1.41	1.58	1.27	0.35	1.04	0.97	0.77	0.93	0.79	0.76			
	Health Risk	7	8	7	8	6	2	5	5	4	4	4	4			
Benzene	Annual Avg	3.02	2.44	2.03	1.89	1.88	1.55	0.97	0.93	1.04	0.73	0.7				
	Health Risk	280	226	188	175	174	144	89	86	97	68	65				
1,3-Butadiene	Annual Avg	0.549	0.385	0.436	0.485	0.385	0.348	0.311	0.287	0.293	0.227	0.193				
	Health Risk	207	145	164	182	145	131	117	108	110	85	72				
Carbon Tetrachloride	Annual Avg	0.127	0.128		0.107		0.102	0.077				0.095				
	Health Risk	33	34		28		27	20				25				
Chromium, Hexavalent	Annual Avg			0.29	0.25	0.25	0.33	0.17	0.13	0.11	0.1	0.13				
	Health Risk			43	37	38	49	25	20	17	15	19				
para-Dichlorobenzene	Annual Avg			0.12	0.12	0.1	0.12	0.14	0.12			0.12				
	Health Risk			8	8	7	8	10	8			8				
Formaldehyde	Annual Avg	2.27	2	2.09	1.83	2.16	2.28	2.7	2.56	2.24	2.69	2.24	2.27			
	Health Risk	17	15	15	13	16	17	20	19	16	20	16	17			
Methylene Chloride	Annual Avg	0.83	6.65	0.66	0.58	0.8	0.69	0.55	0.75			0.5				
	Health Risk	3	23	2	2	3	2	2	3			2				
Perchloroethylene	Annual Avg	0.161	0.153	0.1	0.094	0.064	0.069	0.068	0.096			0.088				
	Health Risk	6	6	4	4	3	3	3	4			4				
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**553**	**457**	**431**	**457**	**392**	**383**	**291**	**253**	**244**	**192**	**215**	**21**			

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-32

San Francisco Bay Area Air Basin

Santa Clara County: San Jose - Jackson Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg														0.84	0.82
	Health Risk														4	4
Benzene	Annual Avg														0.577	0.502
	Health Risk														53	46
1,3-Butadiene	Annual Avg														0.131	0.137
	Health Risk														49	51
Carbon Tetrachloride	Annual Avg														0.096	
	Health Risk														25	
Chromium, Hexavalent	Annual Avg														0.098	0.1
	Health Risk														15	15
para-Dichlorobenzene	Annual Avg														0.15	0.15
	Health Risk														10	10
Formaldehyde	Annual Avg														2.79	2.13
	Health Risk														21	16
Methylene Chloride	Annual Avg														0.19	0.16
	Health Risk														<1	<1
Perchloroethylene	Annual Avg														0.04	0.037
	Health Risk														2	1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk															**179**	**143**

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-33

San Joaquin Valley Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.94	1.84	1.38	1.73	1.29	0.54	1.28	1.19	1.3	1.56	1.09	1.15	1.24	1.34	1.14
	Health Risk	9	9	7	8	6	3	6	6	6	8	5	6	6	7	6
Benzene	Annual Avg	2.45	2.11	1.36	1.32	1.33	1.16	0.73	0.71	0.76	0.69	0.63	0.538	0.552	0.463	0.372
	Health Risk	227	196	126	122	123	107	68	66	71	64	58	50	51	43	34
1,3-Butadiene	Annual Avg	0.409	0.36	0.236	0.339	0.323	0.264	0.222	0.195	0.233	0.177	0.158	0.15	0.146	0.095	0.08
	Health Risk	154	135	89	127	121	99	83	73	88	67	59	56	55	36	30
Carbon Tetrachloride	Annual Avg	0.128	0.129		0.109		0.098	0.077		0.114		0.096	0.086	0.091	0.097	
	Health Risk	34	34		29		26	20		30		25	23	24	26	
Chromium, Hexavalent	Annual Avg			0.23	0.21	0.19	0.28	0.13	0.11	0.1	0.1	0.12		0.086	0.078	0.083
	Health Risk			34	31	29	42	20	16	15	15	18		13	12	13
para-Dichlorobenzene	Annual Avg		0.11	0.11	0.13	0.11	0.11	0.1	0.13			0.11	0.13	0.15	0.15	0.15
	Health Risk		7	7	9	7	8	7	9			7	9	10	10	10
Formaldehyde	Annual Avg	2.45	1.81	1.46	1.67	1.8	2.1	2.96	2.77	2.86	3.44	2.61	3.08	3.13	3.02	2.27
	Health Risk	18	13	11	12	13	15	22	20	21	25	19	23	23	22	17
Methylene Chloride	Annual Avg	0.76	0.59	0.55	0.76	0.59	0.61	0.54	0.53	0.52	0.5	0.53	0.27	0.16	0.14	0.11
	Health Risk	3	2	2	3	2	2	2	2	2	2	2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.126	0.133	0.104	0.473	0.067	0.068	0.068	0.056	0.039		0.076	0.052	0.039	0.033	0.027
	Health Risk	5	5	4	19	3	3	3	2	2		3	2	2	1	1
Diesel PM***	Annual Avg	(2.6)					(1.7)					(1.3)				
	Health Risk	(780)					(510)					(390)				
Average Basin Health Risk		**450**	**401**	**280**	**360**	**304**	**305**	**231**	**194**	**235**	**181**	**196**	**169**	**184**	**157**	**111**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-34

Kern County: Bakersfield - Chester Avenue

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.87	1.83	1.6	2											
	Health Risk	9	9	8	10											
Benzene	Annual Avg	2.68	2.22	1.54	1.47											
	Health Risk	248	205	143	136											
1,3-Butadiene	Annual Avg	0.389	0.306	0.24	0.327											
	Health Risk	146	115	90	123											
Carbon Tetrachloride	Annual Avg	0.127	0.125		0.104											
	Health Risk	33	33		27											
Chromium, Hexavalent	Annual Avg			0.21	0.21											
	Health Risk			31	31											
para-Dichlorobenzene	Annual Avg			0.12	0.17											
	Health Risk			8	11											
Formaldehyde	Annual Avg	2.44	1.62	1.36	1.85											
	Health Risk	18	12	10	14											
Methylene Chloride	Annual Avg	0.92	0.65	0.52	0.99											
	Health Risk	3	2	2	3											
Perchloroethylene	Annual Avg	0.087	0.127	0.075	1.48											
	Health Risk	3	5	3	59											
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**460**	**381**	**295**	**414**											

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-35

San Joaquin Valley Air Basin

Kern County: Bakersfield - 5558 California Avenue

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg						0.49	1.59	1.22	1.27	1.69	1.19	1.27	1.37	1.51	
	Health Risk						2	8	6	6	8	6	6	7	7	
Benzene	Annual Avg						1.14	0.78	0.57	0.7	0.71	0.58	0.549	0.506	0.405	
	Health Risk						106	72	53	65	66	54	51	47	37	
1,3-Butadiene	Annual Avg						0.206	0.211	0.16	0.2	0.153	0.126	0.138	0.099	0.063	
	Health Risk						78	79	60	75	58	47	52	37	24	
Carbon Tetrachloride	Annual Avg						0.099	0.079				0.094	0.086	0.092	0.095	
	Health Risk						26	21				25	23	24	25	
Chromium, Hexavalent	Annual Avg						0.26	0.13	0.1	0.1	0.1	0.1		0.078	0.053	
	Health Risk						39	19	15	15	16	16		12	8	
para-Dichlorobenzene	Annual Avg						0.11	0.11	0.12			0.11	0.13	0.15	0.15	
	Health Risk						7	7	8			7	9	10	10	
Formaldehyde	Annual Avg						1.92	3.48	3.12	2.99	3.67	2.79	3.44	3.15	3.43	
	Health Risk						14	26	23	22	27	21	25	23	25	
Methylene Chloride	Annual Avg						0.54	0.64	0.5		0.5	0.58	0.26	0.1	0.11	
	Health Risk						2	2	2		2	2	<1	<1	<1	
Perchloroethylene	Annual Avg						0.092	0.119	0.039			0.065	0.058	0.047	0.037	
	Health Risk						4	5	2			3	2	2	1	
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk							**278**	**239**	**169**	**183**	**177**	**181**	**168**	**162**	**137**	

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-36

San Joaquin Valley Air Basin

Fresno County: Fresno - 1st Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg		2.29		1.89	1.4	0.67			1.5		1.43	1.6	1.55	1.71	1.27
	Health Risk		11		9	7	3			7		7	8	8	8	6
Benzene	Annual Avg		2.42	1.34	1.35	1.44	1.24	0.79	1	0.83	0.8	0.73	0.61	0.631	0.546	0.403
	Health Risk		224	124	125	133	115	73	92	76	74	68	56	58	51	37
1,3-Butadiene	Annual Avg		0.459	0.262	0.342	0.356	0.3	0.234	0.233	0.265	0.214	0.195	0.182	0.194	0.127	0.098
	Health Risk		173	99	129	134	113	88	87	100	80	73	68	73	48	37
Carbon Tetrachloride	Annual Avg		0.122		0.108		0.099	0.078				0.095	0.086	0.089	0.097	
	Health Risk		32		28		26	21				25	23	23	26	
Chromium, Hexavalent	Annual Avg			0.21	0.15	0.14	0.22	0.1	0.11	0.1	0.1	0.13		0.058	0.05	0.073
	Health Risk			31	22	21	33	16	16	15	15	20		9	8	11
para-Dichlorobenzene	Annual Avg			0.1	0.1	0.14	0.13	0.11	0.14			0.1	0.14	0.15	0.15	0.15
	Health Risk			7	7	9	8	7	9			7	9	10	10	10
Formaldehyde	Annual Avg		2.32		1.64	2.01	2.41			3.42		3.56	4.32	4.16	3.72	2.57
	Health Risk		17		12	15	18			25		26	32	31	27	19
Methylene Chloride	Annual Avg		0.62	0.54	0.69	0.59	0.58	0.5	0.52			0.5	0.27	0.24	0.15	0.14
	Health Risk		2	2	2	2	2	2	2			2	<1	<1	<1	<1
Perchloroethylene	Annual Avg		0.142	0.102	0.1	0.062	0.065	0.041	0.043			0.056	0.046	0.034	0.031	0.023
	Health Risk		6	4	4	2	3	2	2			2	2	1	1	<1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk			**465**	**267**	**338**	**323**	**321**	**209**	**208**	**223**	**169**	**230**	**198**	**213**	**179**	**120**

* Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-37

San Joaquin Valley Air Basin

Stanislaus County: Modesto - I Street (Courthouse)

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg		1.51	1.37	1.75	1.44	0.51	1.17	1.25							
	Health Risk		7	7	8	7	2	6	6							
Benzene	Annual Avg															
	Health Risk															
1,3-Butadiene	Annual Avg															
	Health Risk															
Carbon Tetrachloride	Annual Avg															
	Health Risk															
Chromium, Hexavalent	Annual Avg			0.27	0.23	0.22	0.32	0.16	0.11							
	Health Risk			40	34	33	48	25	17							
para-Dichlorobenzene	Annual Avg															
	Health Risk															
Formaldehyde	Annual Avg		1.43	1.32	1.82	1.86	2.16	2.58	2.43							
	Health Risk		11	10	13	14	16	19	18							
Methylene Chloride	Annual Avg															
	Health Risk															
Perchloroethylene	Annual Avg															
	Health Risk															
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk			**18**	**57**	**55**	**54**	**66**	**50**	**41**							

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-38

San Joaquin Valley Air Basin

Stanislaus County: Modesto - 14th Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg										1.65					
	Health Risk										8					
Benzene	Annual Avg	2.25	1.86	1.2	1.23	1.14	1.2	0.7	0.77	0.85	0.61					
	Health Risk	208	172	111	114	105	111	65	71	78	56					
1,3-Butadiene	Annual Avg	0.379	0.353	0.224	0.348	0.293	0.298	0.236	0.208	0.26	0.162					
	Health Risk	142	133	84	131	110	112	89	78	98	61					
Carbon Tetrachloride	Annual Avg	0.128	0.132		0.112		0.094	0.074		0.113						
	Health Risk	34	35		30		25	20		30						
Chromium, Hexavalent	Annual Avg										0.1					
	Health Risk										15					
para-Dichlorobenzene	Annual Avg		0.11	0.1	0.12	0.1	0.11	0.1	0.15							
	Health Risk		7	7	8	7	7	7	10							
Formaldehyde	Annual Avg										3.09					
	Health Risk										23					
Methylene Chloride	Annual Avg	0.65	0.61	0.55	0.65	0.62	0.58	0.5	0.59	0.51						
	Health Risk	2	2	2	2	2	2	2	2	2						
Perchloroethylene	Annual Avg	0.145	0.15	0.118	0.109	0.087	0.053	0.044	0.052	0.035						
	Health Risk	6	6	5	4	3	2	2	2	1						
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**392**	**355**	**209**	**289**	**227**	**259**	**185**	**163**	**209**	**163**					

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-39

San Joaquin Valley Air Basin

San Joaquin County: Stockton - Hazelton Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.47	1.75	1.07	1.31	1.1		0.9	0.9	1	1.07	0.64	0.59	0.8	0.81	0.87
	Health Risk	7	9	5	6	5		4	4	5	5	3	3	4	4	4
Benzene	Annual Avg	2.01	1.95	1.37		1.23	1.05	0.64	0.52	0.69	0.65	0.58	0.454	0.521	0.437	0.37
	Health Risk	186	181	127		113	97	60	48	64	60	54	42	48	40	34
1,3-Butadiene	Annual Avg	0.336	0.321	0.217		0.281	0.25	0.206	0.181	0.206	0.18	0.155	0.13	0.146	0.096	0.079
	Health Risk	126	121	82		106	94	77	68	77	68	58	49	55	36	30
Carbon Tetrachloride	Annual Avg	0.131	0.136				0.099	0.077		0.115		0.098	0.087	0.091	0.098	
	Health Risk	35	36				26	20		30		26	23	24	26	
Chromium, Hexavalent	Annual Avg			0.22	0.25	0.25		0.14			0.1	0.12		0.123	0.13	0.123
	Health Risk			33	37	37		21			15	18		18	20	18
para-Dichlorobenzene	Annual Avg		0.1	0.1		0.1	0.11	0.1	0.11			0.11	0.13	0.15	0.15	0.15
	Health Risk		7	7		7	7	7	7			7	9	10	10	10
Formaldehyde	Annual Avg	1.81	1.88	1.24	1.38	1.56		2.35	2.24	2.33	2.68	1.61	1.48	2.07	1.91	1.79
	Health Risk	13	14	9	10	12		17	16	17	20	12	11	15	14	13
Methylene Chloride	Annual Avg	0.63	0.5	0.6		0.5	0.75	0.53	0.5	0.5	0.5	0.53	0.27	0.14	0.16	0.12
	Health Risk	2	2	2		2	3	2	2	2	2	2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.129	0.113	0.12		0.066	0.061	0.068	0.09	0.033		0.108	0.053	0.035	0.03	0.022
	Health Risk	5	5	5		3	2	3	4	1		4	2	1	1	<1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**374**	**375**	**270**	**53**	**285**	**229**	**211**	**149**	**196**	**170**	**184**	**139**	**175**	**151**	**109**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-40

San Diego Air Basin

Air Basin Summary

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.33	1.5	1.22	1.41	1.48	0.64	1.03	1	0.86	1.04	0.84	0.95	0.97	0.89	0.89
	Health Risk	6	7	6	7	7	3	5	5	4	5	4	5	5	4	4
Benzene	Annual Avg	2.25	1.7	1.48	1.16	1.39	0.98	0.76	0.76	0.76	0.86	0.65	0.505	0.491	0.483	0.371
	Health Risk	208	158	137	107	129	90	71	70	70	79	60	47	45	45	34
1,3-Butadiene	Annual Avg	0.333	0.257	0.258	0.312	0.307	0.242	0.208	0.198	0.196	0.22	0.159	0.136	0.12	0.089	0.074
	Health Risk	125	97	97	117	115	91	78	75	74	83	60	51	45	33	28
Carbon Tetrachloride	Annual Avg	0.132	0.127		0.103		0.099	0.077				0.094	0.086	0.092	0.093	
	Health Risk	35	34		27		26	20				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.24	0.19	0.16	0.18	0.11	0.11	0.1	0.1	0.1		0.045	0.05	0.03
	Health Risk			36	28	23	27	16	16	15	15	15		7	8	5
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.15	0.12	0.11	0.13				0.15	0.15	0.15	0.15
	Health Risk		7	8	8	10	8	7	8				10	10	10	10
Formaldehyde	Annual Avg	1.64	1.53	1.26	1.76	2.25	2.13	2.62	2.62	2.27	2.67	2.23	2.59	2.99	2.68	2.19
	Health Risk	12	11	9	13	17	16	19	19	17	20	16	19	22	20	16
Methylene Chloride	Annual Avg	0.59	0.83	1.34	1.13	0.73	0.63	0.59	0.57		0.53	0.76	0.17	0.16	0.16	0.13
	Health Risk	2	3	5	4	3	2	2	2		2	3	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.282	0.269	0.263	0.2	0.207	0.249	0.147	0.125			0.089	0.061	0.06	0.047	0.037
	Health Risk	11	11	11	8	8	10	6	5			4	2	2	2	1
Diesel PM***	Annual Avg	(2.9)					(1.9)					(1.4)				
	Health Risk	(870)					(570)					(420)				
Average Basin Health Risk		**399**	**328**	**309**	**319**	**312**	**273**	**224**	**200**	**180**	**204**	**187**	**157**	**160**	**147**	**98**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-41

San Diego Air Basin

San Diego County: Chula Vista

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.1	1.21	0.99	1.16	1.32	0.64	0.83	0.91	0.7	0.91	0.75	0.78	0.75	0.72	0.74
	Health Risk	5	6	5	6	6	3	4	4	3	4	4	4	4	3	4
Benzene	Annual Avg	2	1.21	1.03	0.8	1.08	0.81		0.63	0.61		0.55	0.421	0.419		0.341
	Health Risk	186	112	95	74	100	75		58	56		51	39	39		32
1,3-Butadiene	Annual Avg	0.278	0.183	0.184	0.225	0.262	0.205		0.162	0.153		0.136	0.11	0.107		0.07
	Health Risk	105	69	69	85	98	77		61	57		51	41	40		26
Carbon Tetrachloride	Annual Avg	0.132	0.129		0.101		0.097					0.093	0.086	0.091		
	Health Risk	35	34		27		26					25	23	24		
Chromium, Hexavalent	Annual Avg			0.24	0.2	0.17	0.2	0.11	0.1	0.1	0.11	0.1		0.05	0.063	0.03
	Health Risk			37	30	25	29	16	15	15	16	16		8	9	5
para-Dichlorobenzene	Annual Avg		0.1	0.11	0.13	0.12	0.11		0.13				0.15	0.15		0.15
	Health Risk		7	7	8	8	7		8				10	10		10
Formaldehyde	Annual Avg	1.26	1.3	1.1	1.46	2.08	1.81	2.1	2.37	2	2.49	2.14	2.54	2.56	2.3	1.93
	Health Risk	9	10	8	11	15	13	15	17	15	18	16	19	19	17	14
Methylene Chloride	Annual Avg	0.58	0.59	0.81	1.01	0.57	0.57		0.62			0.65	0.16	0.13		0.12
	Health Risk	2	2	3	3	2	2		2			2	<1	<1		<1
Perchloroethylene	Annual Avg	0.236	0.229	0.208	0.144	0.132	0.146		0.103			0.078	0.057	0.048		0.031
	Health Risk	9	9	8	6	5	6		4			3	2	2		1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**351**	**249**	**232**	**250**	**259**	**238**	**35**	**169**	**146**	**38**	**168**	**138**	**146**	**29**	**92**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-42

San Diego Air Basin

San Diego County: El Cajon - Redwood Avenue

TAC	Conc.*/Risk**	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Annual Average Concentrations and Health Risks																
Acetaldehyde	Annual Avg	1.56	1.78	1.46	1.66			1.23			1.17	0.92	1.11	1.2	1.06	1.04
	Health Risk	8	9	7	8			6			6	4	5	6	5	5
Benzene	Annual Avg	2.5	2.2	1.94	1.51		1.14	0.86	0.89	0.91	0.98	0.74	0.588	0.563	0.561	0.402
	Health Risk	231	203	179	140		106	79	82	84	91	69	54	52	52	37
1,3-Butadiene	Annual Avg	0.387	0.332	0.331	0.398		0.279	0.252	0.235	0.24	0.24	0.182	0.162	0.133	0.101	0.077
	Health Risk	145	125	125	150		105	95	88	90	90	68	61	50	38	29
Carbon Tetrachloride	Annual Avg	0.131	0.125				0.1	0.078				0.095	0.086	0.093	0.093	
	Health Risk	35	33				27	21				25	23	24	24	
Chromium, Hexavalent	Annual Avg			0.24	0.18			0.1	0.11		0.1	0.1		0.04	0.038	
	Health Risk			36	26			16	17		15	15		6	6	
para-Dichlorobenzene	Annual Avg			0.12	0.13		0.12	0.11	0.13				0.15	0.15	0.15	0.15
	Health Risk			8	8		8	7	8				10	10	10	10
Formaldehyde	Annual Avg	2.01	1.76	1.42	2.06			3.14			2.84	2.32	2.63	3.41	3.05	2.45
	Health Risk	15	13	10	15			23			21	17	19	25	22	18
Methylene Chloride	Annual Avg	0.59	1.07	1.87	1.25		0.7	0.61	0.52		0.52	0.87	0.19	0.18	0.18	0.14
	Health Risk	2	4	7	4		2	2	2		2	3	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.329	0.308	0.319	0.256		0.352	0.168	0.147			0.1	0.065	0.072	0.059	0.043
	Health Risk	13	12	13	10		14	7	6			4	3	3	2	2
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**449**	**399**	**385**	**361**		**262**	**256**	**203**	**174**	**225**	**205**	**175**	**176**	**159**	**101**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-43

Sacramento Valley Air Basin

Air Basin Summary

TAC	Conc.*/Risk**	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Annual Average Concentrations and Health Risks																
Acetaldehyde	Annual Avg	1.29			1.37	1.04	0.39	1.03	1.05	0.92	1.23	0.83	0.74	1.14	1.04	1.09
	Health Risk	6			7	5	2	5	5	4	6	4	4	6	5	5
Benzene	Annual Avg	2.02	1.88	1.35	1	1.02	0.8	0.56	0.55	0.5	0.56	0.45	0.422	0.443	0.406	0.406
	Health Risk	187	174	125	92	95	74	51	51	47	52	42	39	41	38	38
1,3-Butadiene	Annual Avg	0.378	0.332	0.283	0.288	0.221	0.186	0.176	0.16	0.154	0.128	0.119	0.125	0.116	0.094	0.093
	Health Risk	142	125	106	108	83	70	66	60	58	48	45	47	44	35	35
Carbon Tetrachloride	Annual Avg	0.123	0.123		0.109		0.099	0.078				0.094	0.088	0.09	0.093	
	Health Risk	33	32		29		26	21				25	23	24	25	
Chromium, Hexavalent	Annual Avg			0.17	0.14	0.13	0.18	0.11	0.1	0.1	0.1	0.1	0.1	0.053	0.05	0.068
	Health Risk			26	21	19	26	16	15	15	15	15	15	8	8	10
para-Dichlorobenzene	Annual Avg			0.11	0.1	0.2	0.14	0.11	0.14			0.1	0.13	0.15	0.15	0.15
	Health Risk			7	7	14	9	7	10			7	9	10	10	10
Formaldehyde	Annual Avg	1.57			1.77	1.75	1.91	2.76	2.92	2.52	3.61	2.51	2.41	3.79	3.53	2.76
	Health Risk	12			13	13	14	20	22	19	27	18	18	28	26	20
Methylene Chloride	Annual Avg	0.65	0.56	0.55	0.98	0.66	0.53	0.54	0.52		0.6	0.57	0.29	0.08	0.08	0.07
	Health Risk	2	2	2	3	2	2	2	2		2	2	1	<1	<1	<1
Perchloroethylene	Annual Avg	0.071	0.074	0.063	0.052	0.165	0.049	0.055	0.052			0.058	0.027	0.025	0.018	0.015
	Health Risk	3	3	3	2	7	2	2	2			2	1	1	<1	<1
Diesel PM***	Annual Avg	(2.5)					(1.6)					(1.2)				
	Health Risk	(750)					(480)					(360)				
Average Basin Health Risk		**385**	**336**	**269**	**282**	**238**	**225**	**190**	**167**	**143**	**150**	**160**	**157**	**162**	**147**	**118**

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

Table C-44

Sacramento Valley Air Basin

Butte County: Chico - Manzanita Avenue

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg				1.55	1.11	0.54	1.15	1.17	0.96	1.41	0.89	1.1	1.33	1.14	1.32
	Health Risk				8	5	3	6	6	5	7	4	5	6	6	6
Benzene	Annual Avg				1.1	1.14	0.85	0.67		0.55	0.64	0.52	0.499	0.544	0.449	0.533
	Health Risk				102	106	78	62		51	59	48	46	50	42	49
1,3-Butadiene	Annual Avg				0.295	0.249	0.205	0.216		0.17	0.149	0.142	0.157	0.154	0.111	0.132
	Health Risk				111	94	77	81		64	56	54	59	58	42	50
Carbon Tetrachloride	Annual Avg				0.108		0.1	0.079					0.088	0.087	0.093	
	Health Risk				29		26	21					23	23	24	
Chromium, Hexavalent	Annual Avg				0.15	0.13	0.16	0.1	0.1	0.1	0.1	0.1	0.1	0.058	0.048	0.075
	Health Risk				23	19	24	16	15	15	15	15	15	9	7	11
para-Dichlorobenzene	Annual Avg				0.1	0.13	0.1	0.12					0.13	0.15	0.15	0.15
	Health Risk				7	8	7	8					9	10	10	10
Formaldehyde	Annual Avg				2.08	1.78	2.04	2.99	3.42	2.63	4.15	2.76	3.25	4.47	3.82	3.4
	Health Risk				15	13	15	22	25	19	31	20	24	33	28	25
Methylene Chloride	Annual Avg				0.81	0.5	0.53	0.58					0.36	0.09	0.07	0.08
	Health Risk				3	2	2	2					1	<1	<1	<1
Perchloroethylene	Annual Avg				0.057	0.265	0.047	0.049					0.024	0.024	0.015	0.014
	Health Risk				2	11	2	2					<1	1	<1	<1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk					300	258	234	220	46	154	168	141	182	**190**	**159**	**151**

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-45

Sacramento Valley Air Basin

Butte County: Chico - Salem Street

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.27														
	Health Risk	6														
Benzene	Annual Avg	1.96	1.91													
	Health Risk	182	177													
1,3-Butadiene	Annual Avg	0.403	0.361													
	Health Risk	151	136													
Carbon Tetrachloride	Annual Avg	0.123	0.123													
	Health Risk	32	33													
Chromium, Hexavalent	Annual Avg															
	Health Risk															
para-Dichlorobenzene	Annual Avg															
	Health Risk															
Formaldehyde	Annual Avg	1.49														
	Health Risk	11														
Methylene Chloride	Annual Avg	0.53	0.57													
	Health Risk	2	2													
Perchloroethylene	Annual Avg	0.047	0.054													
	Health Risk	2	2													
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		**386**	**350**													

* Concentrations for Hexavalent Chromium are expressed as ng/m3, and concentrations for Diesel PM are expressed as µg/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-46

Sacramento Valley Air Basin

Placer County: Roseville - North Sunrise Boulevard

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg					0.96	0.25	0.9	0.93	0.88		0.77	0.39	0.95	0.93	0.87
	Health Risk					5	1	4	4	4		4	2	5	5	4
Benzene	Annual Avg					0.91	0.75	0.44	0.46	0.45	0.48	0.39	0.344	0.343	0.363	0.278
	Health Risk					84	70	40	42	42	44	36	32	32	34	26
1,3-Butadiene	Annual Avg					0.194	0.167	0.135	0.121	0.138	0.107	0.096	0.093	0.078	0.078	0.054
	Health Risk					73	63	51	46	52	40	36	35	29	29	20
Carbon Tetrachloride	Annual Avg						0.099	0.077				0.094	0.087	0.093	0.093	
	Health Risk						26	20				25	23	24	25	
Chromium, Hexavalent	Annual Avg					0.13	0.19	0.11	0.1	0.1	0.1	0.1		0.048	0.053	0.06
	Health Risk					19	29	16	15	15	15	15		7	8	9
para-Dichlorobenzene	Annual Avg					0.28	0.17	0.1	0.15			0.1	0.13	0.15	0.15	0.15
	Health Risk					19	11	7	10			7	9	10	10	10
Formaldehyde	Annual Avg					1.71	1.78	2.52	2.42	2.42		2.25	1.57	3.12	3.23	2.12
	Health Risk					13	13	19	18	18		17	12	23	24	16
Methylene Chloride	Annual Avg					0.82	0.54	0.5	0.5			0.52	0.23	0.08	0.09	0.06
	Health Risk					3	2	2	2			2	<1	<1	<1	<1
Perchloroethylene	Annual Avg					0.065	0.051	0.061	0.063			0.047	0.031	0.026	0.022	0.016
	Health Risk					3	2	2	3			2	1	1	<1	<1
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk						219	217	161	140	131	99	144	114	**131**	**135**	**85**

* Concentrations for Hexavalent Chromium are expressed as ng/m³, and concentrations for Diesel PM are expressed as µg/m³. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-47

Sacramento Valley Air Basin

Sacramento County: Citrus Heights - Sunrise Boulevard

Annual Average Concentrations and Health Risks																
TAC	**Conc.*/Risk****	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Acetaldehyde	Annual Avg	1.32														
	Health Risk	6														
Benzene	Annual Avg	2.08	1.85	1.41												
	Health Risk	192	171	130												
1,3-Butadiene	Annual Avg	0.353	0.302	0.307												
	Health Risk	133	114	115												
Carbon Tetrachloride	Annual Avg	0.124	0.123													
	Health Risk	33	32													
Chromium, Hexavalent	Annual Avg															
	Health Risk															
para-Dichlorobenzene	Annual Avg			0.11												
	Health Risk			7												
Formaldehyde	Annual Avg	1.66														
	Health Risk	12														
Methylene Chloride	Annual Avg	0.76	0.54	0.5												
	Health Risk	3	2	2												
Perchloroethylene	Annual Avg	0.095	0.094	0.076												
	Health Risk	4	4	3												
Diesel PM	Annual Avg	No Monitoring Data Available														
	Health Risk															
Total Health Risk		383	323	257												

* Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as $\mu g/m^3$. Concentrations for all other TACs are expressed as ppb.

** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.

Table C-48

APPENDIX D

Surface Area, Population, and Average Daily Vehicle Miles Traveled

Appendix D: *Surface Area, Population, and Average Daily Vehicle Miles Traveled*

List of Tables

List of Tables (continued)

List of Tables (continued)

Introduction

This appendix provides information on the square mile surface area, population, and average number of vehicle miles traveled (VMT) each day in California. The trend data for population and daily VMT cover the period 1980 through 2020. Data are listed for each air basin, for each county within each air basin, and for the State as a whole. In cases where a county is split between two or more air basins, the data reflect only that portion of the county within the respective air basin. It is important to note that the average daily VMT listed in the following tables has been divided by 1000.

Surface areas were calculated based on United States Census Bureau data from the 2000 Census. The surface areas shown reflect land portions of air basins only and exclude water bodies, including bays, lakes, and rivers.

The population data were derived from reports developed by the California Department of Finance (DOF), Demographic Research Unit. Split county fractions for 1990 and 2000 were derived using census 1990 and 2000 data. County and air basin fractions for years not listed above were interpolated. The population data do not reflect any adjustment for the estimated census undercount.

The estimates of daily vehicle miles traveled (VMT) for the years 1980 through 2020 are found in ARB's revised motor vehicle emissions inventory model, EMFAC2002 version 2.2 (refer to *www.arb.ca.gov/msei/msei.htm*). The VMT estimates have been revised from those published in last year's Almanac,based on changes in vehicle population, mileage accrual rates, and the data provided by regional transportation planning agencies (RTPAs). For recent calendar years, the VMT estimates in large urbanized areas are provided by RTPAs as an output of their travel demand models. For historical years (pre-1999), the VMT is calculated as the product of vehicle population backcast from Department of Motor Vehicles data and mileage accrual rates (annual miles traveled by type and age of vehicle) calculated from the Bureau of Automotive Repair database for the Smog Check program. In this case, lower estimates of vehicle population and lower mileage accrual rates, along with subtle changes in the vehicle age distribution, combine to generate lower VMT estimates for all but the most recent years. More detailed information about the methodologies used in developing both the population and VMT trends is available from the ARB staff at (916) 322-7062.

California

Surface Area = 155959 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	23782000	26402401	29828687	31711155	34098738	37033482	39246767	41549270	43851741
Avg. Daily VMT/1000	389107	517683	677171	731207	796075	872885	957360	1032915	1109515

Table D-1

Great Basin Valleys Air Basin

Surface Area = 13986 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	27700	27900	29390	30870	32334	33658	34478	35286	36093
Avg. Daily VMT/1000	687	763	935	899	937	1093	1310	1496	1669

Table D-2

Alpine County
Surface Area = 739 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1100	1100	1090	1170	1205	1304	1377	1409	1441
Avg. Daily VMT/1000	26	27	36	37	41	47	55	62	69

Table D-3

Inyo County
Surface Area = 10203 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	17900	18000	18200	18300	18203	18596	18396	18400	18404
Avg. Daily VMT/1000	404	418	547	536	565	656	778	875	963

Table D-4

Mono County
Surface Area = 3044 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8700	8800	10100	11400	12926	13758	14705	15477	16248
Avg. Daily VMT/1000	257	318	352	326	331	390	477	559	637

Table D-5

Lake County Air Basin

Surface Area = 1258 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	36800	45600	51000	56600	58605	64135	69259	74468	79676
Avg. Daily VMT/1000	807	1090	1276	1495	1545	1825	2236	2686	3128

Table D-6

Lake Tahoe Air Basin

Surface Area = 224 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	36205	36237	39329	43689	46882	53297	58121	64309	70497
Avg. Daily VMT/1000	600	695	856	1024	1082	1245	1484	1718	1935

Table D-7

El Dorado County
Surface Area = 157 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	27680	27520	29954	32834	34530	38104	41049	44623	48197
Avg. Daily VMT/1000	418	447	535	625	643	738	887	1046	1187

Table D-8 A portion of El Dorado County lies within the Mountain Counties Air Basin.

Placer County
Surface Area = 66 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8525	8717	9375	10855	12352	15193	17072	19686	22300
Avg. Daily VMT/1000	182	248	321	399	439	507	597	672	748

Table D-9 Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

Surface Area = 27287 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	357420	485698	676405	749277	822404	917280	975761	1034503	1093241
Avg. Daily VMT/1000	5320	9087	18237	20231	22576	27466	32784	38533	44686

Table D-10

Kern County
Surface Area = 3786 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	82560	96324	111408	115382	112780	127985	137093	149069	161044
Avg. Daily VMT/1000	1672	2473	3218	3607	4022	5018	6201	7639	8724

Table D-11 A portion of Kern County lies within the San Joaquin Valley Air Basin.

Los Angeles County
Surface Area = 1522 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	97504	160542	231254	262112	300764	321115	328476	335134	341792
Avg. Daily VMT/1000	1982	3240	6300	6147	6567	8132	9933	11940	14333

Table D-12 A portion of Los Angeles County lies within the South Coast Air Basin.

Riverside County
Surface Area = 3054 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	10449	13048	18538	22199	25880	31529	35942	40180	44416
Avg. Daily VMT/1000	73	123	245	322	390	455	517	579	640

Table D-13 Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

San Bernardino County
Surface Area = 18923 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	166907	215784	315205	349584	382980	436651	474250	510120	545989
Avg. Daily VMT/1000	1593	3251	8474	10155	11597	13861	16133	18375	20989

Table D-14 A portion of San Bernardino County lies within the South Coast Air Basin.

Mountain Counties Air Basin

Surface Area = 12226 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	229578	272823	345964	385721	411003	447754	477342	515267	553190
Avg. Daily VMT/1000	5217	6739	9171	10431	11084	13252	15639	17882	20135

Table D-15

Amador County
Surface Area = 593 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	19500	22200	30450	33400	35327	37771	39287	40772	42257
Avg. Daily VMT/1000	565	700	983	1127	1149	1468	1712	1927	2257

Table D-16

Calaveras County
Surface Area = 1020 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	20900	25000	32450	38350	40740	45204	49599	54645	59691
Avg. Daily VMT/1000	569	689	985	1172	1209	1542	2016	2544	3132

Table D-17

El Dorado County
Surface Area = 1553 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	58820	71580	97346	112066	124012	136845	147422	160257	173092
Avg. Daily VMT/1000	1230	1661	2204	2685	2874	3386	3780	4156	4413

Table D-18 A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mariposa County
Surface Area = 1451 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	11200	12500	14400	16450	16985	17981	18608	19608	20607
Avg. Daily VMT/1000	264	310	449	503	487	570	691	797	903

Table D-19

Nevada County
Surface Area = 958 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	52500	64700	79000	87100	92393	100199	106910	116911	126912
Avg. Daily VMT/1000	1117	1582	2062	2273	2434	2869	3456	3963	4492

Table D-20

Placer County
Surface Area = 908 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	11958	15143	20498	21795	22456	27621	31036	35789	40542
Avg. Daily VMT/1000	237	344	412	504	746	918	1034	1169	1251

Table D-21 Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Plumas County
Surface Area = 2553 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	17400	18600	19800	20800	20713	21143	21067	21025	20983
Avg. Daily VMT/1000	350	403	562	615	667	736	818	863	899

Table D-22

Sierra County
Surface Area = 953 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	3100	3200	3320	3560	3645	3529	3530	3592	3654
Avg. Daily VMT/1000	68	77	100	92	99	109	122	130	136

Table D-23

Tuolumne County
Surface Area = 2235 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	34200	39900	48700	52200	54732	57461	59883	62668	65452
Avg. Daily VMT/1000	817	973	1414	1460	1419	1654	2010	2333	2652

Table D-24

North Central Coast Air Basin

Surface Area = 5156 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	506400	565800	623000	645950	714220	750228	787044	825998	864950
Avg. Daily VMT/1000	9059	12267	16058	16656	18324	19953	21723	23255	24988

Table D-25

Monterey County
Surface Area = 3321 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	292100	327400	356800	360400	403943	430150	453292	479326	505359
Avg. Daily VMT/1000	5757	7645	9911	10123	11346	12276	13237	14185	15250

Table D-26

San Benito County
Surface Area = 1389 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	25200	29900	36900	44350	53789	58216	62530	68039	73547
Avg. Daily VMT/1000	579	830	1188	1353	1498	1711	1983	2235	2518

Table D-27

Santa Cruz County
Surface Area = 445 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	189100	208500	229300	241200	256488	261862	271222	278633	286044
Avg. Daily VMT/1000	2723	3792	4959	5180	5480	5966	6503	6835	7220

Table D-28

North Coast Air Basin

Surface Area = 12339 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	244387	258167	286800	303272	310978	324336	333829	346372	358913
Avg. Daily VMT/1000	5480	6531	8691	9098	9210	10258	11726	12868	13942

Table D-29

Del Norte County
Surface Area = 1008 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	18300	19100	24450	27850	27497	29014	29126	29946	30765
Avg. Daily VMT/1000	413	406	575	594	565	676	829	997	1172

Table D-30

Humboldt County
Surface Area = 3572 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	108900	110600	119400	125000	126859	131317	133136	136327	139518
Avg. Daily VMT/1000	2111	2418	3152	3207	3194	3482	3927	4224	4452

Table D-31

Mendocino County
Surface Area = 3508 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	67000	73400	80600	83800	86555	90468	94300	97482	100664
Avg. Daily VMT/1000	1315	1549	2142	2302	2363	2709	3198	3593	3960

Table D-32

Sonoma County
Surface Area = 1071 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	38187	42267	49350	53122	57084	59853	63825	69195	74564
Avg. Daily VMT/1000	1392	1886	2452	2638	2734	2998	3313	3524	3762

Table D-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Trinity County
Surface Area = 3179 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	12000	12800	13000	13500	12983	13684	13442	13422	13402
Avg. Daily VMT/1000	249	272	370	357	354	393	459	530	596

Table D-34

Northeast Plateau Air Basin

Surface Area = 14788 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	70500	75200	81025	83875	88042	91075	92112	92746	93379
Avg. Daily VMT/1000	1507	1707	2291	2518	2251	2521	2897	3200	3472

Table D-35

Lassen County
Surface Area = 4557 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	21800	24300	27700	28900	33978	35751	36954	37593	38232
Avg. Daily VMT/1000	397	450	609	721	720	813	931	1019	1099

Table D-36

Modoc County
Surface Area = 3944 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	8700	9400	9675	9975	9570	9855	9547	9416	9285
Avg. Daily VMT/1000	184	197	241	259	250	296	352	408	472

Table D-37

Siskiyou County
Surface Area = 6287 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	40000	41500	43650	45000	44494	45469	45611	45737	45862
Avg. Daily VMT/1000	926	1060	1441	1538	1281	1412	1614	1773	1901

Table D-38

Sacramento Valley Air Basin

Surface Area = 14994 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1500924	1688217	1977625	2155511	2353221	2645098	2925202	3259235	3593262
Avg. Daily VMT/1000	27881	35762	47540	52178	54681	62630	70184	77831	84078

Table D-39

Butte County
Surface Area = 1639 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	144900	161600	183200	197500	203855	215558	228020	244375	260730
Avg. Daily VMT/1000	2525	3140	4320	4549	4496	4996	5762	6456	7138

Table D-40

Colusa County
Surface Area = 1151 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	12900	14600	16300	17850	18928	20935	22697	24517	26337
Avg. Daily VMT/1000	362	441	531	547	550	636	751	855	959

Table D-41

Glenn County
Surface Area = 1314 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	21500	22900	24850	26400	26640	28163	29348	30649	31950
Avg. Daily VMT/1000	522	651	725	772	685	789	947	1099	1252

Table D-42

Placer County
Surface Area = 429 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	97917	114940	145027	178950	217794	267884	301005	347102	393198
Avg. Daily VMT/1000	2231	2783	3736	4672	6034	7428	8373	9461	10055

Table D-43 Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento County
Surface Area = 966 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	787900	890700	1046900	1120700	1233560	1392930	1555848	1751264	1946679
Avg. Daily VMT/1000	14618	18996	24774	27057	27090	30519	33091	35567	37370

Table D-44

Shasta County
Surface Area = 3785 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	116600	129100	148000	159700	164673	180246	196464	212193	227922
Avg. Daily VMT/1000	2190	2728	3802	4009	4068	4633	5504	6192	6787

Table D-45

Solano County
Surface Area = 511 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	63807	75977	98298	109111	121904	130606	139838	155125	170411
Avg. Daily VMT/1000	961	1258	2085	2334	2703	3152	3522	4150	4870

Table D-46

A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sutter County
Surface Area = 603 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	52600	57800	64800	74200	79526	88905	95757	103807	111856
Avg. Daily VMT/1000	895	1164	1616	1769	1921	2333	2922	3534	4196

Table D-47

Tehama County
Surface Area = 2951 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	39100	44000	49850	54600	55933	60261	62442	65383	68323
Avg. Daily VMT/1000	714	823	1295	1325	1279	1427	1658	1825	1959

Table D-48

Yolo County
Surface Area = 1013 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	113900	123500	141800	154600	169997	192508	222277	246659	271040
Avg. Daily VMT/1000	2200	2932	3519	3924	4577	5206	5812	6535	7007

Table D-49

Yuba County
Surface Area = 631 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	49800	53100	58600	61900	60411	67102	71506	78161	84816
Avg. Daily VMT/1000	663	846	1137	1220	1278	1511	1842	2157	2485

Table D-50

Salton Sea Air Basin

Surface Area = 6304 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	230077	270397	354177	422163	469910	560117	631366	702883	774399
Avg. Daily VMT/1000	5232	7060	11284	13002	11392	12677	14181	15672	17480

Table D-51

Imperial County
Surface Area = 4174 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	92500	98600	110100	136200	143595	162599	178201	196294	214386
Avg. Daily VMT/1000	2289	2695	3800	4019	4090	4725	5490	6231	7064

Table D-52

Riverside County
Surface Area = 2129 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	137577	171797	244077	285963	326315	397518	453165	506589	560013
Avg. Daily VMT/1000	2943	4365	7484	8983	7302	7952	8691	9441	10416

Table D-53 Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin and County

Surface Area = 4200 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1873300	2109300	2504900	2615200	2836179	3073469	3258951	3446262	3633572
Avg. Daily VMT/1000	31707	43517	63591	67943	73909	82660	87481	93886	97542

Table D-54

San Francisco Bay Area Air Basin

Surface Area = 5340 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	5095406	5473956	5874353	6182467	6646727	6953438	7337485	7736635	8135781
Avg. Daily VMT/1000	90066	109789	133990	144854	159271	172581	193300	202212	213900

Table D-55

Alameda County
Surface Area = 738 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1109500	1196000	1276100	1335100	1453042	1526821	1651164	1757655	1864145
Avg. Daily VMT/1000	19704	24193	28991	29721	32844	33918	40723	42306	44378

Table D-56

Contra Costa County
Surface Area = 720 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	658500	710900	806300	872800	956361	1032968	1116298	1221690	1327081
Avg. Daily VMT/1000	12175	15390	19335	21371	23780	26978	29988	32063	34603

Table D-57

Marin County
Surface Area = 520 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	222700	220200	229900	238400	248222	251607	252440	251850	251260
Avg. Daily VMT/1000	3714	4521	5620	6028	6652	7690	7857	8045	8374

Table D-58

Napa County
Surface Area = 754 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	99300	102900	111000	117300	124970	134129	142121	154034	165946
Avg. Daily VMT/1000	1479	1739	2184	2693	3000	3575	3887	4154	4453

Table D-59

San Francisco County
Surface Area = 47 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	680500	727500	723200	739900	780963	798688	816230	818388	820545
Avg. Daily VMT/1000	8350	10041	11687	11939	12661	12607	13867	14194	14605

Table D-60

San Mateo County
Surface Area = 449 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	588100	617300	648200	675900	710715	725098	747134	766937	786740
Avg. Daily VMT/1000	12253	14516	17965	20271	21677	23538	25136	25912	27234

Table D-61

Santa Clara County
Surface Area = 1291 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1300200	1410500	1495300	1573500	1692759	1765162	1844146	1925569	2006992
Avg. Daily VMT/1000	24779	29689	35537	38834	43103	46770	52405	53915	56104

Table D-62

Solano County
Surface Area = 318 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	173393	197323	244203	258389	275307	294959	315809	350331	384853
Avg. Daily VMT/1000	3332	4282	5656	5725	6469	7543	8429	9937	11656

Table D-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

Sonoma County
Surface Area = 504 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	263213	291333	340150	371178	404388	424006	452143	490181	528219
Avg. Daily VMT/1000	4280	5418	7015	8272	9085	9962	11008	11686	12493

Table D-64

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin

Surface Area = 23490 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1979840	2275776	2645192	2972618	3212583	3632469	3959518	4389922	4820322
Avg. Daily VMT/1000	32884	42075	60357	71772	81055	94209	107741	122270	135618

Table D-65

Fresno County

Surface Area = 5963 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	517400	582800	670200	756000	804333	889029	949961	1032308	1114654
Avg. Daily VMT/1000	8036	10288	14149	16980	18920	21821	24732	27856	30471

Table D-66

Kern County

Surface Area = 4355 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	323540	377476	436592	503618	552587	627088	671715	730392	789068
Avg. Daily VMT/1000	6239	8024	11219	12695	14819	17533	20632	24212	27631

Table D-67

A portion of Kern County lies within the Mojave Desert Air Basin.

Kings County

Surface Area = 1391 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	74200	83900	101900	115900	130087	145952	156334	170543	184751
Avg. Daily VMT/1000	980	1249	1828	2887	3114	3545	3885	4260	4632

Table D-68

Madera County

Surface Area = 2136 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	63900	74800	88500	109900	124542	141218	150278	167122	183966
Avg. Daily VMT/1000	1562	1957	2512	2819	3553	4540	5442	6595	7386

Table D-69

Merced County

Surface Area = 1929 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	135500	157000	179400	199000	211245	243915	277715	319273	360831
Avg. Daily VMT/1000	2511	2963	4849	5640	6331	7152	8365	9605	10809

Table D-70

San Joaquin County

Surface Area = 1399 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	350200	417200	481900	522100	569064	662864	747149	868306	989462
Avg. Daily VMT/1000	5748	7691	10881	13190	14866	17052	19318	21587	23577

Table D-71

Stanislaus County

Surface Area = 1494 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	267700	302000	373600	415300	451025	509985	559051	606446	653841
Avg. Daily VMT/1000	3784	4823	8291	9585	10549	11992	13392	14730	16282

Table D-72

Tulare County

Surface Area = 4824 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	247400	280600	313100	350800	369700	412418	447315	495532	543749
Avg. Daily VMT/1000	4024	5080	6628	7976	8903	10574	11975	13425	14830

Table D-73

South Central Coast Air Basin

Surface Area = 7887 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	988800	1119300	1255900	1319000	1407686	1503118	1578438	1636071	1693703
Avg. Daily VMT/1000	13928	19051	26992	28218	30885	33432	35736	38009	40320

Table D-74

San Luis Obispo County
Surface Area = 3304 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	156600	184200	217800	230200	248106	262843	277437	291356	305274
Avg. Daily VMT/1000	2649	3735	5200	5418	5974	6668	7533	8131	8743

Table D-75

Santa Barbara County
Surface Area = 2737 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	300000	338200	369000	383700	400929	420577	440337	452178	464019
Avg. Daily VMT/1000	4819	6496	9216	9004	9585	10233	10736	11250	11655

Table D-76

Ventura County
Surface Area = 1845 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	532200	596900	669100	705100	758651	819698	860664	892537	924410
Avg. Daily VMT/1000	6460	8820	12576	13796	15326	16531	17467	18628	19922

Table D-77

South Coast Air Basin

Surface Area = 6480 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	10604663	11698030	13083627	13744942	14687964	15984010	16727861	17389313	18050763
Avg. Daily VMT/1000	158732	221550	275902	290888	317873	337083	358938	381397	406622

Table D-78

Los Angeles County
Surface Area = 2538 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	7402796	8030358	8629046	8838988	9277704	9905483	10132531	10337916	10543300
Avg. Daily VMT/1000	111447	152496	178897	181009	190484	194908	202547	213854	225490

Table D-79

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

Orange County
Surface Area = 789 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	1944800	2166300	2412000	2604500	2863552	3080710	3260162	3393153	3526144
Avg. Daily VMT/1000	28211	41177	53543	58532	65356	70251	74629	78690	83767

Table D-80

Riverside County
Surface Area = 2024 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	521774	651556	925686	1070638	1206883	1470225	1676041	1873630	2071219
Avg. Daily VMT/1000	8452	12671	22304	26846	34479	40563	46039	50025	54848

Table D-81

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

San Bernardino County
Surface Area = 1129 square miles

Parameter	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	735293	849816	1116895	1230816	1339825	1527592	1659127	1784614	1910100
Avg. Daily VMT/1000	10622	15206	21158	24501	27554	31361	35723	38828	42517

Table D-82

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX E

Natural Sources

Appendix E: *Natural Sources*

List of Tables

List of Tables (continued)

List of Tables (continued)

Introduction

Appendix E contains estimates of emissions from natural processes occurring in terrestrial, marine, or aquatic ecosystems. Natural source air emissions include a variety of compounds and occur as a result of geologic or meteorological activity (such as petroleum seeps, or wildfires), or living processes by flora and fauna (such as emissions from vegetation foliage, or from soil microbes). Emissions resulting from anthropogenic activities, such as soil ammonia (NH_3) emissions resulting from fertilizer application, burning of agricultural crop residues, prescribed burning of natural areas, wildfires that are managed for resources benefit, and windblown dust from crop fields and pastures are provided in Chapter 2. Windblown dust emissions from dry lake beds have also not been included.

For this edition of the Almanac, categories of natural sources include geogenic (petroleum seeps) and biogenic (vegetation) sources, and wildfires. Other categories may be added in future editions. Natural emissions are strongly affected by seasonal influences on factors such as temperature and moisture conditions, or wind regimes. Emissions during "peak season" are often orders of magnitude greater than emissions during dormant periods. Emissions for some categories (for example see Figure E-1) are therefore reported with respect to time of year, in addition to annual averages. Emissions can fluctuate greatly from year-to-year due to variation in meteorology or land cover/land use. Methods for forecasting future natural emissions due to changes in climate or land cover/land use remain in the realm of on-going scientific research, and have not been applied in this edition of the Almanac.

Statewide

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**2225**	**2482**	**79**	**24**	**253**	**215**	**76**
Biogenic Sources*	2067	0	0	0	0	0	15
Geogenic Sources*	29	0	0	0	0	0	36
Wildfires**	128	2482	79	24	253	215	25

* Biogenic and geogenic emissions are not year-specific.
** Wildfire emissions reflect 10-year averages.
Table E-1

Biogenic Sources

Biogenic volatile organic compounds (BVOCs) are emitted into the atmosphere from terrestrial ecosystems such as vegetation. BVOCs include isoprene, monoterpenes, methylbutenol (MBO), and other biogenic VOCs (OVOCs). These compounds are of interest because of their roles in atmospheric chemistry and climate. In the presence of anthropogenic NOx compounds, isoprene has been found to play a significant role in ozone chemistry. Monoterpenes and MBO are moderately reactive. OVOCs are a general category comprised of less reactive compounds, such as methanol and acetone. Isoprene, monoterpenes, MBO, and a fraction of the OVOCs are considered as reactive organic gas (ROG).

Plant BVOC emissions vary by compound and by orders of magnitude among various plant species. BVOCs play roles in plant physiology and chemical defense from pests and plant diseases. BVOC emissions are strongly influenced by environmental factors such as temperature and sunlight. Biophysical and environmental mechanisms controlling the synthesis and emission of isoprene, monoterpenes, and MBO have been studied across a variety of plant species and landscapes. Less is known about OVOCs. As a result, the BVOC research community has developed BVOC emission models, which have been routinely applied by the climate research, air quality, and emissions modeling community. A statewide model was developed to estimate BVOC emissions from vegetation over the course of a calendar year. The model runs at a 4 km x 4 km spatial resolution and generates hourly emissions of isoprene, monoterpenes, MBO, and OVOCs. Emissions from vegetation were estimated from plant species leaf mass and emission factors, and environmental adjustment algorithms representing light and temperature dependence of BVOC emissions. Leaf mass density estimates, used to scale emissions from leaf to landscapes, were based on Geographic Information System (GIS) land use/land cover databases, species leaf weight factors, and monthly satellite leaf area index (LAI) data. Temporal and spatial variation in the model was driven by monthly estimates of leaf mass densities and hourly light and temperature. The annual statewide emission of BVOC (reported here as ROG) is estimated to be over 750,000 tons, composed of 37 percent isoprene, 30 percent MBO, 24 percent monoterpenes, and 9 percent OVOC. As shown in Figure E-1, the majority of biogenic emissions are produced during the ozone season (May through October).

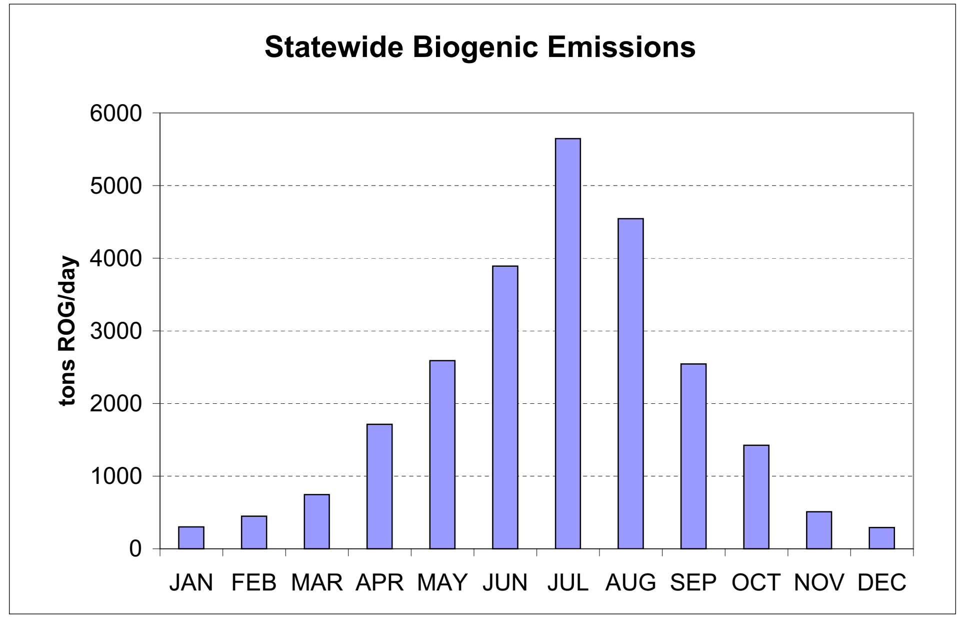

Figure E-1

Geogenic Sources

Petroleum gas and oil seeps occur naturally in California and have been active for millennia. Oil and gas seeps form where oil or natural gas emerge from subsurface sources to the ground or water surface. Seeps are associated with water springs in which oil floats to the surface of the water, and gas bubbles out into the atmosphere. Large seeps may be comprised of nearly pure oil, asphaltum, or semisolid bitumen. Most seeps are mixed with varying amounts of sand, clay, and biomass debris. Terrestrial seep flows vary with the seasons, with elevated flows occurring during warm weather. Seismic activity can create new seeps or cause increased flows from existing seeps. Major marine seeps are located off the coast of Santa Barbara County. Other seeps occur in regions of oil and gas production throughout the state.

Wildfires

A wildfire is a natural event that burns a variety of vegetation types ranging in age, size, and density. This wildfire category does not include prescribed fires such as agriculture burning, forest management fires, or Wildland Fire Use (WFU). A prescribed burn is a fire ignited by a planned management action whereas a WFU is a naturally ignited lightning fire that is managed for resources benefit.

Wildfires can vary significantly from year to year; an area may have extreme wildfire behavior one year and the following year have none. Emissions for PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, NO_2, NH_3, CH_4, and ROG (Total Non-Methane Hydrocarbon, reported here as ROG) are estimated by Air Basin and County. About 97 percent of wildfires burn between May and October, with August the highest month. The wildfire emission estimates presented in this 2004 Almanac are based on a 10-year average that was calculated from actual 1994-2003 wildfire activity. Figure E-2 is a map showing all of the wildfires that burned between 1994 and 2003 in California. The tables that follow show the 10-year average emissions per air basin and county.

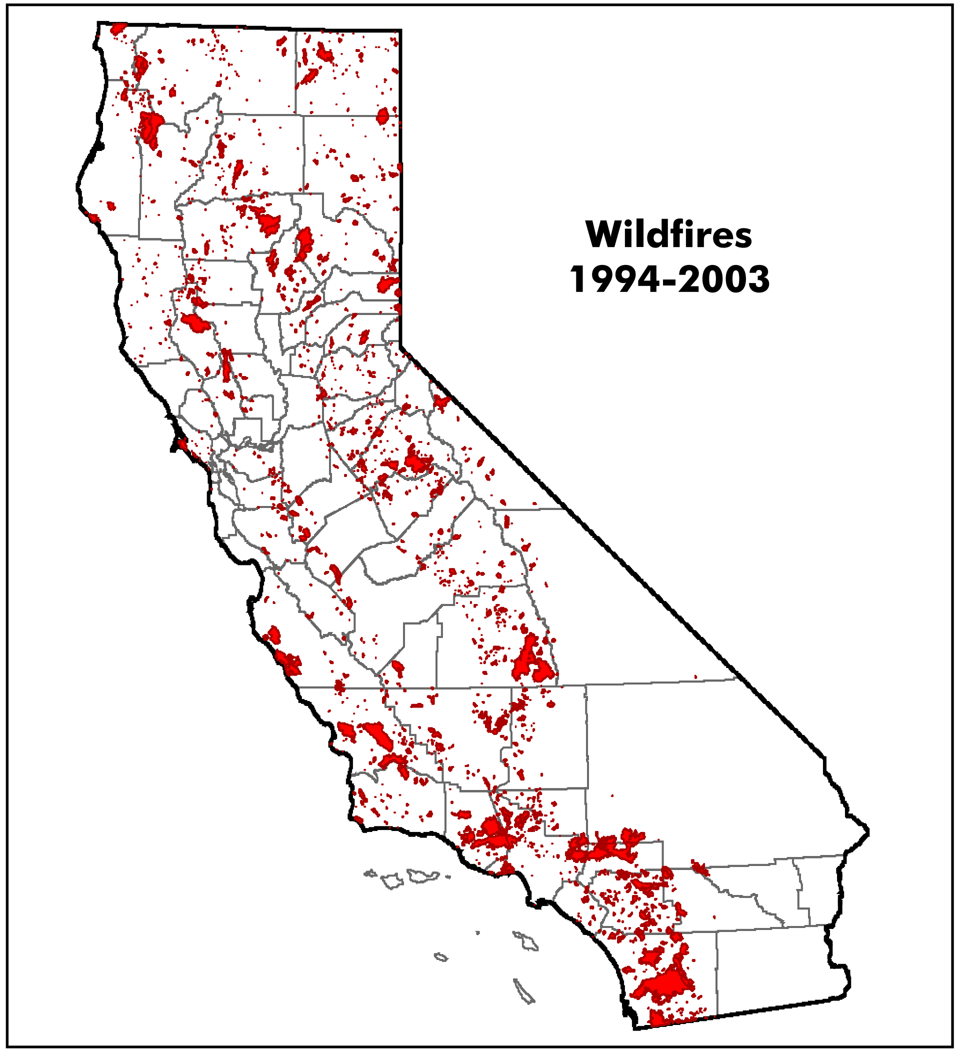

Figure E-2

Great Basin Valleys Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**37**	**8**	**0**	**0**	**1**	**1**	**3**
Biogenic Sources	36	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	8	0	0	1	1	0

Table E-2

Alpine County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**9**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	9	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-3

Inyo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**2**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	7	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	2	0	0	0	0	0

Table E-4

Mono County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**21**	**6**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	21	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-5

Lake County Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**64**	**124**	**4**	**1**	**13**	**11**	**2**
Biogenic Sources	55	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	9	124	4	1	13	11	1

Table E-6

Lake Tahoe Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-7

El Dorado County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**2**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	2	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-8 A portion of El Dorado County lies within the Mountain Counties Air Basin.

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	1	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-9 Portions of Placer County lie within the Mountain Counties and Sacramento Valley Air Basins.

Mojave Desert Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**39**	**95**	**3**	**1**	**10**	**8**	**5**
Biogenic Sources	36	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	4	95	3	1	10	8	1

Table E-10

Kern County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**25**	**41**	**1**	**0**	**4**	**4**	**1**
Biogenic Sources	23	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	41	1	0	4	4	0

Table E-11 A portion of Kern County lies within the Mojave Desert Air Basin.

Los Angeles County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**6**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	6	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-12 A portion of Los Angeles County lies within the South Coast Air Basin.

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**0**	**2**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	0	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	2	0	0	0	0	0

Table E-13 Portions of Riverside County lie within the Salton Sea and South Coast Air Basins.

San Bernardino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**52**	**1**	**0**	**5**	**4**	**3**
Biogenic Sources	6	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	1	52	1	0	5	4	1

Table E-14 A portion of San Bernardino County lies within the Mojave Desert Air Basin.

Mountain Counties Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**330**	**396**	**12**	**4**	**40**	**34**	**6**
Biogenic Sources	305	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	25	396	12	4	40	34	4

Table E-15

Amador County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**15**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-16

Calaveras County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**39**	**15**	**0**	**0**	**2**	**1**	**0**
Biogenic Sources	38	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	15	0	0	2	1	0

Table E-17

El Dorado County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**50**	**5**	**0**	**0**	**1**	**0**	**0**
Biogenic Sources	49	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	5	0	0	1	0	0

Table E-18 A portion of El Dorado County lies within the Lake Tahoe Air Basin.

Mariposa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**15**	**0**	**0**	**2**	**1**	**0**
Biogenic Sources	35	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	15	0	0	2	1	0

Table E-19

Nevada County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**7**	**0**	**0**	**1**	**1**	**0**
Biogenic Sources	36	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	7	0	0	1	1	0

Table E-20

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**28**	**34**	**1**	**0**	**3**	**3**	**0**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	34	1	0	3	3	0

Table E-21 Portions of Placer County lie within the Lake Tahoe and Sacramento Valley Air Basins.

Plumas County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**51**	**161**	**5**	**1**	**16**	**14**	**2**
Biogenic Sources	43	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	8	161	5	1	16	14	2

Table E-22

Sierra County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**20**	**38**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	38	1	0	4	3	0

Table E-23

Tuolumne County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**54**	**120**	**4**	**1**	**12**	**10**	**2**
Biogenic Sources	46	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	8	120	4	1	12	10	1

Table E-24

North Central Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**73**	**44**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	72	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	44	1	0	5	4	0

Table E-25

Monterey County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**51**	**41**	**1**	**0**	**4**	**4**	**2**
Biogenic Sources	50	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	41	1	0	4	4	0

Table E-26

San Benito County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**17**	**3**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	3	0	0	0	0	0

Table E-27

Santa Cruz County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**5**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	5	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-28

North Coast Air Basin
Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**373**	**393**	**14**	**4**	**41**	**35**	**6**
Biogenic Sources	363	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	9	393	14	4	41	35	4

Table E-29

Del Norte County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**27**	**39**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	24	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	39	1	0	4	3	0

Table E-30

Humboldt County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**86**	**149**	**5**	**2**	**16**	**13**	**2**
Biogenic Sources	81	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	5	149	5	2	16	13	1

Table E-31

Mendocino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**118**	**6**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	117	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-32

Sonoma County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**23**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	23	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-33

A portion of Sonoma County lies within the San Francisco Bay Area Air Basin.

Trinity County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**119**	**198**	**7**	**2**	**21**	**17**	**3**
Biogenic Sources	118	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	198	7	2	21	17	2

Table E-34

Northeast Plateau Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**283**	**212**	**7**	**2**	**22**	**19**	**6**
Biogenic Sources	269	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	14	212	7	2	22	19	2

Table E-35

Lassen County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**59**	**47**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	56	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	3	47	1	0	5	4	0

Table E-36

Modoc County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**57**	**52**	**2**	**1**	**5**	**5**	**2**
Biogenic Sources	54	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	3	52	2	1	5	5	1

Table E-37

Siskiyou County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**166**	**113**	**4**	**1**	**12**	**10**	**2**
Biogenic Sources	159	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	8	113	4	1	12	10	1

Table E-38

Sacramento Valley Air Basin
Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**379**	**379**	**12**	**4**	**39**	**33**	**8**
Biogenic Sources	367	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	12	379	12	4	39	33	4

Table E-39

Butte County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**44**	**89**	**3**	**1**	**9**	**8**	**1**
Biogenic Sources	41	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	89	3	1	9	8	1

Table E-40

Colusa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**23**	**15**	**1**	**0**	**2**	**1**	**1**
Biogenic Sources	22	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	15	1	0	2	1	0

Table E-41

Glenn County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**37**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	17	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	3	37	1	0	4	3	0

Table E-42

Placer County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-43 Portions of Placer County lie within the Lake Tahoe and Mountain Counties Air Basins.

Sacramento County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**10**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-44

Shasta County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**167**	**49**	**2**	**1**	**5**	**4**	**1**
Biogenic Sources	166	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	49	2	1	5	4	0

Table E-45

Solano County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**4**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	4	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-46 A portion of Solano County lies within the San Francisco Bay Area Air Basin.

Sutter County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-47

Tehama County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**71**	**170**	**5**	**2**	**17**	**15**	**2**
Biogenic Sources	66	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	4	170	5	2	17	15	2

Table E-48

Sacramento Valley Air Basin (continued)

Natural Source Emissions (tons/day, annual average)

Yolo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**16**	**17**	**1**	**0**	**2**	**2**	**1**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	17	1	0	2	2	0

Table E-49

Yuba County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**15**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	15	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-50

Salton Sea Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**12**	**0**	**0**	**1**	**1**	**5**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	1	12	0	0	1	1	0

Table E-51

Imperial County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**4**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	0	0	0	0	0	0	0

Table E-52

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**12**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	12	0	0	1	1	0

Table E-53 Portions of Riverside County lie within the Mojave Desert and South Coast Air Basins.

San Diego Air Basin and County

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**76**	**138**	**4**	**1**	**14**	**12**	**2**
Biogenic Sources	67	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	9	138	4	1	14	12	1

Table E-54

San Francisco Bay Area Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**106**	**49**	**2**	**1**	**5**	**4**	**1**
Biogenic Sources	105	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	49	2	1	5	4	1

Table E-55

Alameda County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**2**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	11	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	2	0	0	0	0	0

Table E-56

Contra Costa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**11**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	11	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-57

Marin County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**4**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	4	0	0	0	0	0

Table E-58

Napa County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**27**	**37**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	1	37	1	0	4	3	0

Table E-59

San Francisco County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	1	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-60

San Mateo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	7	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-61

Santa Clara County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**29**	**6**	**0**	**0**	**1**	**1**	**0**
Biogenic Sources	29	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	6	0	0	1	1	0

Table E-62

Solano County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	3	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	0	0	0	0	0	0

Table E-63

A portion of Solano County lies within the Sacramento Valley Air Basin.

Sonoma County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**10**	**1**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	10	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	1	0	0	0	0	0

Table E-64

A portion of Sonoma County lies within the North Coast Air Basin.

San Joaquin Valley Air Basin
Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**235**	**348**	**11**	**3**	**35**	**30**	**19**
Biogenic Sources	211	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	14
Wildfires	24	348	11	3	35	30	3

Table E-65

Fresno County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**64**	**15**	**0**	**0**	**1**	**1**	**3**
Biogenic Sources	63	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	3
Wildfires	1	15	0	0	1	1	0

Table E-66

Kern County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**17**	**1**	**0**	**2**	**1**	**4**
Biogenic Sources	18	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	4
Wildfires	1	17	1	0	2	1	0

Table E-67

A portion of Kern County lies within the Mojave Desert Air Basin.

Kings County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**4**	**1**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	4	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	0	1	0	0	0	0	0

Table E-68

Madera County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**38**	**3**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	38	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	3	0	0	0	0	0

Table E-69

Merced County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**6**	**1**	**0**	**0**	**0**	**0**	**2**
Biogenic Sources	6	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	0	1	0	0	0	0	0

Table E-70

San Joaquin County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**8**	**0**	**0**	**0**	**0**	**0**	**1**
Biogenic Sources	8	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	0	0	0	0	0	0	0

Table E-71

Stanislaus County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**13**	**16**	**1**	**0**	**2**	**1**	**1**
Biogenic Sources	12	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	1	16	1	0	2	1	0

Table E-72

Tulare County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**82**	**296**	**9**	**3**	**30**	**25**	**5**
Biogenic Sources	61	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	21	296	9	3	30	25	3

Table E-73

South Central Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**123**	**120**	**4**	**1**	**12**	**10**	**5**
Biogenic Sources	93	0	0	0	0	0	0
Geogenic Sources	23	0	0	0	0	0	4
Wildfires	8	120	4	1	12	10	1

Table E-74

San Luis Obispo County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**36**	**62**	**2**	**1**	**6**	**5**	**3**
Biogenic Sources	32	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	2
Wildfires	4	62	2	1	6	5	1

Table E-75

Santa Barbara County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**54**	**12**	**0**	**0**	**1**	**1**	**1**
Biogenic Sources	35	0	0	0	0	0	0
Geogenic Sources	19	0	0	0	0	0	1
Wildfires	0	12	0	0	1	1	0

Table E-76

Ventura County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**33**	**46**	**1**	**0**	**5**	**4**	**2**
Biogenic Sources	26	0	0	0	0	0	0
Geogenic Sources	4	0	0	0	0	0	1
Wildfires	3	46	1	0	5	4	0

Table E-77

South Coast Air Basin

Natural Source Emissions (tons/day, annual average)

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**86**	**164**	**5**	**2**	**17**	**14**	**6**
Biogenic Sources	76	0	0	0	0	0	3
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	11	164	5	2	17	14	2

Table E-78

Los Angeles County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**34**	**65**	**2**	**1**	**7**	**6**	**2**
Biogenic Sources	30	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	1
Wildfires	4	65	2	1	7	6	1

Table E-79

A portion of Los Angeles County lies within the Mojave Desert Air Basin.

Orange County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**9**	**2**	**0**	**0**	**0**	**0**	**0**
Biogenic Sources	9	0	0	0	0	0	0
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	0	2	0	0	0	0	0

Table E-80

Riverside County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**24**	**38**	**1**	**0**	**4**	**3**	**1**
Biogenic Sources	22	0	0	0	0	0	1
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	2	38	1	0	4	3	0

Table E-81

Portions of Riverside County lie within the Mojave Desert and Salton Sea Air Basins.

San Bernardino County

Category	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	NH_3
Natural Sources Total	**19**	**59**	**2**	**1**	**6**	**5**	**3**
Biogenic Sources	15	0	0	0	0	0	2
Geogenic Sources	0	0	0	0	0	0	0
Wildfires	4	59	2	1	6	5	1

Table E-82

A portion of San Bernardino County lies within the Mojave Desert Air Basin.

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APPENDIX F

Lists of Figures and Tables

for Chapters 1 through 5

List of Figures

Chapter 1: *Introduction*

Chapter 2: *Current Emissions and Air Quality -- Criteria Pollutants*

List of Figures (continued)

List of Figures (continued)

List of Figures (continued)

List of Figures (continued)

List of Tables

Chapter 1: ***Introduction***

Chapter 2: ***Current Emissions and Air Quality -- Criteria Pollutants***

Chapter 3: ***Statewide Trends and Forecasts -- Criteria Pollutants***

List of Tables (continued)

List of Tables (continued)

List of Tables (continued)

Chapter 5: *Toxic Air Contaminant Emissions, Air Quality, and Health Risk*

List of Tables (continued)

List of Tables (continued)